



U.S. Department of the Interior
Bureau of Land Management

Burns District Office
HC 74-12533 Hwy 20 West
Hines, Oregon 97738

August 1995

HD
243
.07
P843
1995

Pueblo-Lone Mountain Allotment Management Plan Environmental Assessment

EA OR-026-93-030

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM LIBRARY
RG 150A BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225

BLM/OR/WA/AE-95/034+1792

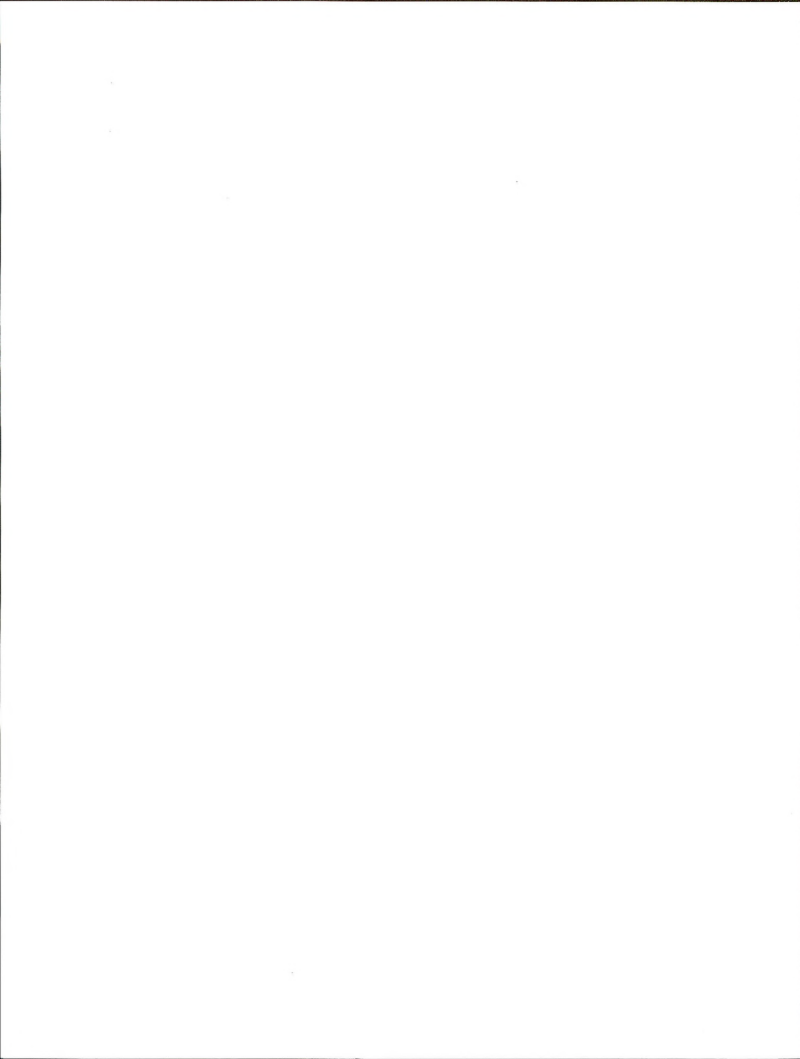
ID88045255

AD
243
107
P843
1995

PUEBLO-LONE MOUNTAIN ALLOTMENT
MANAGEMENT PLAN
ENVIRONMENTAL ASSESSMENT

EA OR-026-93-030

BLM LIBRARY
RS 150A BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225

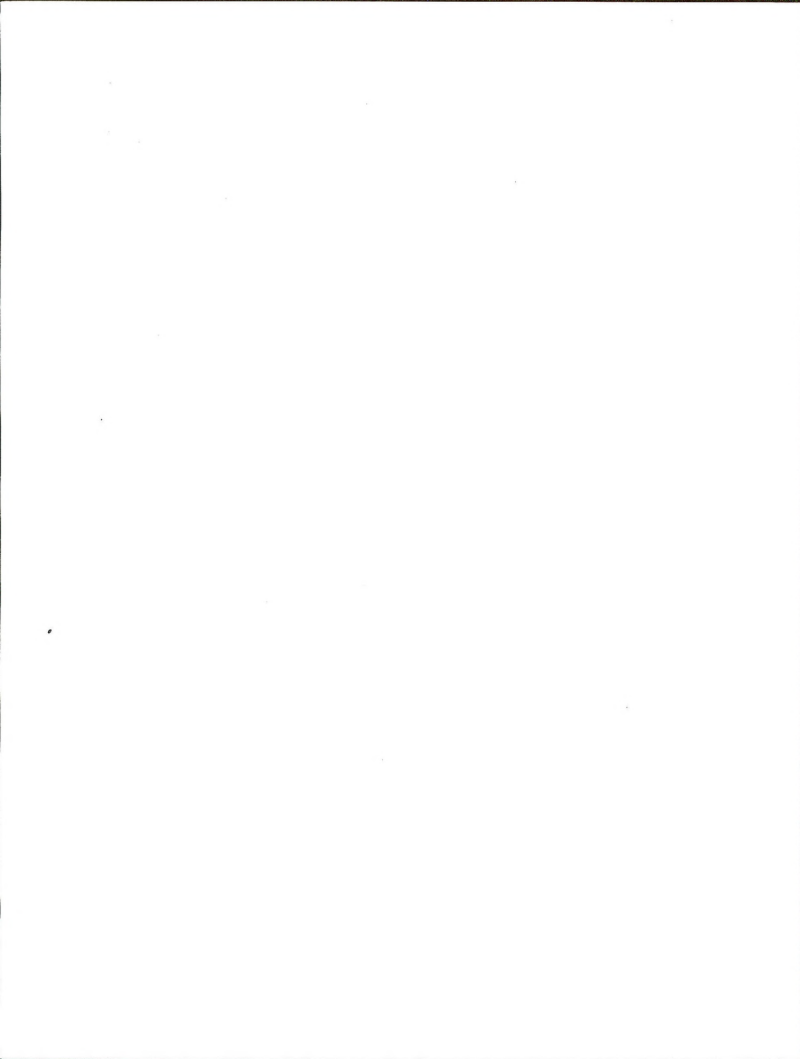


NOTE TO THE REVIEWER

All acreage calculations in this document have been generated using computer technology in the Geographic Information System (GIS). Please note that these acreage figures are different from those published in previous documents. This new technology allows us to more accurately calculate acreages than techniques used in the past. Be assured that no changes have been made to previously identified boundaries because of these new acreage figures.

TABLE OF CONTENTS

I.	PURPOSE AND NEED	1
A.	Introduction	1
B.	Prior Environmental Analysis	3
II.	AFFECTED ENVIRONMENT	3
A.	Introduction	3
B.	Physiography	3
C.	Soils	4
D.	Climate	5
E.	Water Quality and Quantity	6
F.	Air Quality	7
G.	Vegetation	8
H.	Research Natural Areas/Areas of Critical Environmental Concern	12
I.	Fish and Wildlife	12
J.	Cultural Resources	19
K.	Visual Quality and Recreation	19
L.	Wilderness	20
M.	Economic and Social Character	24
III.	DESCRIPTION OF ALTERNATIVES	25
A.	Introduction	25
B.	Pueblo-Lone Mountain Allotment Management Goals	25
C.	Pueblo-Lone Mountain Allotment Objectives	27
D.	Alternative A (Historical Use)	27
E.	Alternative B (Preferred Alternative)	30
F.	Alternative C (Additional Projects)	45
G.	Other Alternatives Considered	55
IV.	ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES	55
A.	Introduction	55
B.	Alternative A (Historical Use)	58
1.	Environmental Consequences of Alternative A (Historical Use)	58
2.	Environmental Consequences of Proposed Projects for Alternative A (Historical Use)	63
3.	Summary	63
C.	Alternative B (Preferred Alternative)	64
1.	Environmental Consequences of Alternative B (Preferred Alternative) Grazing System	64
2.	Summary	78
3.	Recommended Mitigation	79
D.	Alternative C (Additional Projects)	80
1.	Environmental Consequences of Alternative C (Additional Projects) Grazing System	80
V.	CUMULATIVE IMPACTS	89
VI.	GLOSSARY	93
VII.	PERSONS, GROUPS, AND GOVERNMENT AGENCIES CONSULTED	96
VIII.	INTENSITY OF PUBLIC INTEREST	96
IX.	PARTICIPATING STAFF	97



APPENDICES

Appendix 1	Allotment Location and Major Roads
Appendix 2	Land Status
Appendix 3	General Soils Map
Appendix 4	Soil Erodibility Map
Appendix 5	Dominant Vegetation Zones
Appendix 6	Ecological Status
Appendix 7	Special Status Plants
Appendix 8	Wilderness Study Areas and Research Natural Areas
Appendix 9	Wildlife
Appendix 10	Interim Management Policy for Lands Under Wilderness Review
Appendix 11	Monitoring Plan
Appendix 12	Special Status Animals
Appendix 13	Creek Miles and Expected Recovery
Appendix 14	Grazing Formula - Alternative A
Appendix 15	Grazing Formula - Alternative B
Appendix 16	Grazing Formula - Alternative C
Appendix 17	Phenological Data of Key Species
Appendix 18	Impacts to Wilderness Values per Wilderness Study Area
Appendix 19	Draft Finding of No Significant Impact

FINAL PUEBLO-LONE MOUNTAIN ALLOTMENT
MANAGEMENT PLAN ENVIRONMENTAL ASSESSMENT

EA OR-026-93-030

I. PURPOSE AND NEED

A. Introduction

The Pueblo-Lone Mountain Allotment No. 6020 encompasses 268,623 acres of public land in southern Harney County (refer to Appendix 1 - Location Map). Domestic livestock have grazed this vast sagebrush and bunchgrass dominated land since the mid-1880's. In the early settlement years, livestock typically wintered on the valley floor and moved to higher elevations when conditions warranted or when lower elevation forage was consumed, usually in the early spring. Livestock, both cattle and sheep, continually grazed the allotment until they were gathered or herded to the valley floor in late fall - a common historical scenario in the Great Basin. Throughout the year, ranchers often competed for any available green forage, resulting in the forage being totally consumed.

Land within the Pueblo-Lone Mountain Allotment is typical of land found in the Northern Great Basin which is characterized by ridges and valleys generally oriented in a north to south direction. The allotment contains rugged and scenic terrain that has very high natural values for wildlife, riparian habitat, and human-related uses such as recreation and livestock grazing.

It has long been recognized that conflicts occur between livestock grazing and other natural values. Such conflicts currently exist in the Pueblo-Lone Mountain Allotment and the resulting downward trend and poor condition of riparian areas has been of concern for almost 20 years. Over the years, attempts were made to improve rangeland resource values through changes in season of use, controlling livestock numbers, and project development aimed at providing periodic rest and improving livestock distribution. These attempts, however, have not allowed riparian areas to function properly, have caused meadows to degrade rather than improve, and have provided minimal benefits to upland areas in the allotment.

In 1985, State and private land exchanges were completed which added 16,960 acres and 1,568 Animal Unit Months (AUMs) to the Pueblo-Lone Mountain Allotment.

In 1988, AUMs were shifted in and out of the allotment either by decision or transferred by an application to other allotments. This shifting of AUMs resulted in a net increase of approximately 1,000 AUMs within the allotment.

After years of repeated seasonlong use, the allotment was formally evaluated in 1989 to determine if the stocking rate matched the carrying capacity and to see if allotment-specific objectives were being met. The evaluation determined that grazing use was too heavy, especially on the riparian vegetation associated with the streams and on wet and dry meadow areas. As a result of the evaluation, and pending further monitoring and development of a management plan for the allotment, a voluntary 14 percent nonuse agreement was initiated in 1989 between the permittees and the Bureau of Land Management (BLM).

Additional management changes were initiated in 1992, when the Fields Basin Allotment was created from the northern portion of the Pueblo-Lone Mountain Allotment and put under a grazing management system. This action removed 33,576 acres of public land and 3,866 AUMs from the allotment.

Also, in 1992, additional restrictions were initiated in the Van Horn Basin area after the presence of Lahontan cutthroat trout, a Federally threatened fish species, was confirmed in Van Horn Creek on the east side of the Pueblos. In order to meet the requirements of the Endangered Species Act, the grazing season on the east side of the Desert Pasture was shortened to improve Lahontan cutthroat trout habitat along Van Horn Creek.

The allotment currently consists of 13 pastures either fenced or bordered by inaccessible rims (refer to Appendix 2 - Land Status and Pasture Map). Most of the pastures are relatively small except for the Desert Pasture which encompasses a majority of the allotment.

Six permittees currently hold grazing permits within the allotment. Following is a list of the permittees and their grazing preferences:

Preference (AUMs)

<u>Permittee Name</u>	<u>Active</u>	<u>Voluntary Nonuse</u>	<u>Total</u>
Stafford Ranches Trout Creek	4,846	789	5,635
Nolan Edwards (Leased)	3,697	620	4,317
Lorin Sherburn	2,968	481	3,449
Herb Dixon (Pueblo Ranch)	2,239	367	2,606
John Bakos (Oregon End Ranch)	1,586	259	1,845
Mary Waldkirch	<u>112</u>	<u>0</u>	<u>112</u>
Total	15,448	2,516	17,964

This Environmental Assessment (EA) identifies resource objectives for the allotment and analyzes the key elements of a Pueblo-Lone Mountain Allotment Management Plan (AMP). The key elements of an AMP are the grazing system and the range improvements necessary to implement the system. Several alternatives and a no action alternative are analyzed. Additional alternatives were considered but dropped due to constraints associated with proceeding with additional permanent projects within Wilderness Study Areas (WSAs).

A BLM interdisciplinary team developed the allotment objectives and prepared this EA. Disciplines involved are range, watershed, soils, fisheries, wildlife, wilderness, recreation, and cultural resources. Members of the Pueblo-Lone Mountain Work Group, which helped with the scoping of issues in the development of this EA were the Oregon Watershed Improvement Coalition, Sierra Club, Izaak Walton League, Oregon Department of Fish and Wildlife (ODFW), Natural Resources Conservation Service, Harney County Commissioners, and local ranching interests.

The purpose of the AMP is to prescribe management to move towards the overall goals of properly functioning ecosystems in the Pueblo-Lone Mountain area, including watersheds that are in properly functioning physical condition, ecological processes that maintain healthy biotic populations and communities, water quality that meets or exceeds State water quality standards, and habitats that have been restored and are maintained or enhanced for Federal threatened, endangered, Federal Category 2 candidate, and other Special Status species.

The Resource Area intends to begin implementing the Pueblo-Lone Mountain AMP in April 1996. The AMP will guide grazing management in the Pueblo-Lone Mountain Allotment for the next 15 years or more.

B. Prior Environmental Analysis

This AMP and EA are in accordance with the 1982 Andrews Management Framework Plan, the 1983 Andrews Grazing Management Program Final Environmental Impact Statement (EIS), and the 1989 Final Oregon Wilderness EIS.

The Andrews Grazing Management Program Draft EIS of September 1982, described and analyzed the environmental impacts of a proposed livestock management program for the Andrews Resource Area. The Andrews Rangeland Program Summary (RPS) of May 1984, summarized the rangeland management program as outlined in the EIS and serves as the decision document to implement the Resource Area's livestock management program. It analyzed all grazing systems proposed for use in the Resource Area at that time.

The Andrews EIS described the resource conditions and issues in the Andrews Resource Area including the Pueblo-Lone Mountain Allotment. Watershed, wildlife, fisheries, and livestock forage were the most prominent resource issues where conflicts were identified. Many of the conflicts were related to the intensity and season of cattle use. These same issues remain relevant today along with proper management of the WSAs and Areas of Critical Environmental Concern (ACECs).

II. AFFECTED ENVIRONMENT

A. Introduction

This section describes the resources within the Pueblo-Lone Mountain Allotment. Only those resources likely to be impacted by the components of the alternatives are evaluated.

B. Physiography

The Pueblo-Lone Mountain Allotment lies entirely within the Basin and Range geomorphic province. The Basin and Range area is characterized by large, normal faults tending a northerly direction. These faults have produced numerous fault-block mountain ranges and basins of internal drainage. The Pueblo Mountains are a large fault-block tilting to the west and bounded on the east by large fault scarps. East of the Pueblo Mountains lies Pueblo Valley, at the southern end of the Alvorad Desert.

Elevations range from 4,100 feet in the Pueblo Valley up to 8,632 feet on Pueblo Peak. This difference in elevation has a strong influence on climate and vegetation as well as wildlife and livestock use.

C. Soils

The soils of the Pueblo-Lone Mountain Allotment are categorized by soil depth and temperature to form the general soil groupings described below (refer to Appendix 3 - General Soils Map). Soil depth correlates with the landforms while the soil temperature correlates with precipitation and frost-free periods. The compilation was from an Order 3 Ecological Site Inventory (ESI) completed in the early 1980's.

Warm Bottomland and Basin Soils:

Outerkirck-Alvodeest-Defenbaugh-Goldrun association: Somewhat poorly to somewhat excessively drained, saline and nonsaline, deep and very deep, clayey, silty, and sandy textured soils with 0 to 20 percent gravel-sized rock fragments throughout the soil profile, on alluvial fans, fan terraces, basins, and sand dunes; 6 to 10 inches precipitation; 80 to 100 days frost-free period; 3,900 to 5,700 feet elevation.

Warm Upland Soils:

Tuntum-Vining-Felcher-Bruncan association: Well-drained, very shallow to moderately deep, clayey and loamy textured soils with 5 to 50 percent gravel- and cobble-sized rock fragments throughout the soil profile; 8 to 12 inches precipitation; 80 to 100 days frost-free period; 4,200 to 7,400 feet elevation.

Cool Bottomland and Basin Soils:

Vergas-Rinconflat-Carvix association: Well-drained, deep and very deep, loamy textured soils with 0 to 60 percent gravel- and cobble-sized rock fragments throughout the soil profile, on alluvial fans, fan terraces, stream terraces, and floodplains; 10 to 14 inches precipitation; 50 to 80 days frost-free period; 4,200 to 7,400 feet elevation.

Cool Upland Soils:

Lonely-Robson-Actem-Raz association: Well-drained, shallow to moderately deep, loamy to clayey textured soils with 0 to 65 percent gravel- and cobble-sized rock fragments throughout the soil profile, on mountains, hills, pediments, and tablelands; 8 to 12 inches precipitation; 50 to 80 days frost-free period; 4,200 to 8,000 feet elevation.

Cold Upland Soils:

Krackle-Croesus-Noname association: Well-drained, very shallow to moderately deep, loamy textured soils with 10 to 50 percent gravel-, cobble-, and stone-sized rock fragments throughout the soil profile, on mountains, hills, and escarpments; 30 to 60 days frost-free period; 12 to 20 inches precipitation; 4,600 to 8,200 feet elevation.

Soil Erodibility:

The Soil Erodibility Map (Appendix 4), was compiled using the dominant map unit component to rate the potential nonpoint surface wind and water erosion for each map unit. This is the susceptibility of either wind or water erosion for soil map units that have been stripped of surface vegetation as happens when areas are burned or overgrazed.

Water Erosion:

Water erosion was rated using factors in the revised universal soil loss equation taking into consideration the rainfall runoff factor, soil surface erodibility, percent and length of slope, and surface rock fragment cover. This was rated against the maximum allowable soil loss for each soil component in a map unit. The average potential tons of soil loss per acre per year estimated for the areas are as follows:

Slight = 0.75 ton per acre per year
Moderate = 3 tons per acre per year
Severe = 8 tons per acre per year

Wind Erosion:

Wind erosion was rated using the surface texture of the fine earth soil fraction. In general, sandy loams are moderate and loamy sands and sands are severe.

Soil units found within this allotment are related to specific landforms or positions in the landscapes. Using this relationship, soil map units can be grouped into the following:

- a. Very deep, poorly drained soils found on nearly level floodplains and terraces.
- b. Shallow to moderately deep soils found on well-drained lake terraces and low, rolling foothills.
- c. Shallow to moderately deep well-drained soils found on moderately sloping tablelands to very steep hillsides.
- d. Shallow to moderately deep well-drained soils found on moderately steep hillsides and mountainsides.

D. Climate

The mean annual temperature for Denio, Nevada, is 48.9 °F. Winters in the Denio area are usually cold and summers are hot and dry. Denio is located at an elevation of 4,190 feet above sea level. At higher elevations, temperature extremes tend to be greater, and the mean annual temperature is lower.

Average annual precipitation for Denio, Nevada, is 9 inches. Generally precipitation increases at a rate of 1-inch per 1,000 feet gain in elevation. Much of this precipitation falls during the winter months in the form of snow. Some spring rains come in April and May, with thunderstorms common in the hotter part of the summer. July, August, and September are the driest months, with less than 10 percent of the annual total precipitation.

As is typical of eastern Oregon, the evaporation rate is high with estimated pan evaporation varying from 40 inches in the upland areas to 60+ inches in the lower, open valleys.

E. Water Quality and Quantity

Most of the streams found in the allotment are small, with peak flows often less than 10 cubic feet per second (cfs), and most are dry or intermittent in their lower reaches by mid-August. The distribution of water across the allotment is uneven, with most of the streams and spring complexes situated in the eastern portion of the allotment and associated with the Pueblo Mountains. Pipelines, wells, reservoirs, springs, and guzzlers (watering devices for wildlife), in addition to streams, provide water for both livestock and wildlife.

Of the numerous small streams in the allotment, five were identified in the 1988 Oregon Department of Environmental Quality (DEQ) list of waters with nonpoint sources of water pollution (DEQ 1988). The identified nonpoint source pollution problems and the beneficial uses for these streams are displayed in Table 1.

TABLE 1

Streams in the Pueblo-Lone Mountain Allotment that have been Identified as Having Nonpoint Source Water Pollution Problems and the Impacted Beneficial Uses (from DEQ 1988)

STREAM NAME	NONPOINT SOURCE POLLUTION	BENEFICIAL USES
Fields Creek	turbidity, erosion	aesthetic quality
Reaux Creek	turbidity, erosion	aesthetic quality
Willow Creek	turbidity, low dissolved oxygen, sedimentation, erosion, low flow	livestock watering, other aquatic life, wildlife, aesthetic quality
Little Cottonwood Creek	turbidity, low dissolved oxygen, sedimentation, erosion, low flow	livestock watering, other aquatic life, wildlife, water contact recreation, aesthetic quality
Van Horn Creek	turbidity, low dissolved oxygen, sedimentation, erosion, low flow	livestock watering, warm water fish, other aquatic life, wildlife, water contact recreation, aesthetic quality*

* Van Horn Creek also provides habitat for the Federally threatened Lahontan cutthroat trout

BLM's water quality data for the allotment are limited to Van Horn and Little Cottonwood Creeks, the only perennial streams. Both flow off the east face of the Pueblo Mountains. Van Horn Creek is perennial downstream to the lower BLM boundary where irrigation diversion dewater the stream for most of the summer months. Little Cottonwood Creek is perennial except during periods of extended drought, when it becomes intermittent over most of its length by mid-August to early September. Water quality of Van Horn Creek as it pertains to fish is discussed under the Wildlife section.

Water temperatures in the lower reaches of Van Horn Creek, where good riparian cover exists, tend to be good throughout the year. The temperatures range from less than 4 °C during winter months to about 15 °C during the warmest periods. Little Cottonwood Creek exhibits higher water temperatures ranging from less than 5 °C during winter months to about 23 °C during summer. The highest water temperatures in both streams occur during the summer months and have been reached as early as June.

Dissolved oxygen (DO) values range from 6 ppm to 10 ppm. Conductivity values for both streams range from 125 to 360 micromhos/cm at 25 °C. The associated level of total dissolved solids falls into the range of the more productive waters in eastern Oregon.

Both streams show similar alkaline patterns, with pH values ranging from 7.8 to 8.6. Total alkalinity values for the two streams range from 85 ppm CaCO₃ in early spring to 390-430 ppm in early summer, above the general range for Oregon of 45-200 ppm. Hardness values for Van Horn Creek range from 70-170 ppm CaCO₃ and for Little Cottonwood Creek, from 100-160 ppm CaCO₃. Hardness values in both streams increase in the summer months and decrease during winter months, possibly due to the dilution by high flows during wet periods of the year as well as increased photosynthetic activity in the streams during the summer.

Suspended sediment yields for both streams during May, July, and August 1982 were relatively low, ranging from 5.6 to 21 ppm, but the samples did not include peak flows. Both streams have shown visually estimated heavy sediment loads exceeding 1,000 ppm during peak flows.

Average annual sediment production across the allotment is not known but is assumed to vary widely according to geology, soils, amount of runoff, slope, land treatment practices, and upstream watershed conditions. Many of the smaller streams have little or no flow except during periods of melting snow and high runoff. Gullies have formed in some uplands having deep soils and along many streams. Some stream segments have severe erosion. Accelerated soil erosion has occurred due to vehicle use, mining, cattle trails, and adverse effects of excessive cattle use on vegetation, including meadows, streambank vegetation, and upland vegetation. Some side slopes exhibit flow patterns and pedestaling of rocks and plants.

F. Air Quality

Prevailing winds are westerly with the most wind movement occurring in the spring. Local wind storms with velocities in excess of 60 mph occasionally occur.

Air quality is good over the entire region. Occasional dust storms reduce the air quality for short periods of time due to suspended particulate matter. Carbon monoxide, hydrocarbons, nitrogen oxide, and sulfur oxide concentrations are all extremely low due to very low traffic volumes, absence of large population centers, and the total lack of industrial development in the area.

G. Vegetation

The distribution of vegetation is strongly influenced by soils, climate, fire, aspect, and livestock grazing (refer to Appendix 5 for locations of dominant vegetation types found in the Pueblo-Lone Mountain Allotment). Differences in dominant vegetation are often a result of variations in soil characteristics. Variations within plant communities may be due to subtle changes in soils, aspect, slope, uneven grazing use, insect outbreaks, disease, fire effects, and weather conditions.

The "condition" of upland vegetation or any of its components can be expressed in several ways, one such expression being "ecological status." This is defined as "the present state of vegetation on a range site in relation to the potential plant community for that site." Four range condition classes or seral stages are used to express the degree to which the composition of the present upland plant community reflects that of a "climax" or potential natural upland community.

These classes are:

<u>Range Condition</u> <u>Class or Seral Stage</u>	<u>Percent of Present Plant</u> <u>Community That is Climax</u> <u>for the Range Site</u>
Climax	76 - 100
Late	51 - 75
Middle	26 - 50
Early	0 - 25

Determination of range condition requires an ESI, which includes information on soils and vegetation. In 1982, an ESI was completed for the Pueblo-Lone Mountain Allotment. Ecological status for the dominant vegetation components in the allotment are depicted in Appendix 6.

Big sagebrush is the dominant shrub species over most of the allotment. Large areas of Wyoming big sagebrush cover slopes and flats on both sides of the Pueblo Mountains. Basin big sagebrush is common in many of the creek bottoms and on sites with deeper soils. Mountain big sagebrush is found above 6,500 feet in elevation. Historical fire frequency within this community type is estimated to be 15 to 20 years (Burkhardt J.W. and E.W. Tisdale, 1976; Houston, D.B., 1973; Gruel and Eddleman (unpubl.)). Big sagebrush is often associated with green and gray rabbitbrush, horsebrush, snowberry, green and Nevada Mormon tea, wax currant, purple sage, and serviceberry.

Low sagebrush is the dominant shrub on many ridges on the east side of the allotment having rocky, shallow soils.

Greasewood, shadscale, spiny hopsage, and budsage are four salt desert shrub species found as dominants at low elevations in Pueblo Valley.

Threetip sagebrush occurs in the south end of the allotment. Black sagebrush grows near Big Springs Table near the Nevada-Oregon border.

Mountain shrubs, such as curleaf mountain mahogany and bitterbrush, occur as dominant species in specific areas in the Pueblo Mountains. Curleaf mountain mahogany is found in the higher elevations of Van Horn Basin and the headwaters of Little Cottonwood Creek. Bitterbrush can be found near Arizona, Reaux, Williams, and Van Horn Creeks, and other locations. Both bitterbrush and curleaf mountain mahogany are important cover and forage species for big game and are also browsed by cattle.

Western juniper is rare in the allotment but some can be found on the south side of Lone Mountain, and in the Little Cottonwood Creek and Van Horn Creek drainages.

Crested wheatgrass was seeded in the Rincon area in 1953 and big sagebrush has reinvaded some portions of the seeding, reducing the density and vigor of the grass. Crested wheatgrass has also been seeded in Colony Seeding, Colony Winter, and North Sandhills Seeding. Crested wheatgrass seedings generally offer high-quality and quantity areas for livestock use which provide alternatives to livestock grazing on native plant species.

Idaho fescue, bluebunch wheatgrass, Thurber needlegrass, mountain brome, cheatgrass, Sandberg bluegrass, and bottlebrush squirreltail are common grass species over much of the sagebrush covered rangeland. Other important grass species include Great Basin wildrye, saltgrass, needleandthread grass, junegrass, and Indian ricegrass.

Some of the common forbs of the area are low pussytoes, tailcup lupine, arrowleaf balsamroot, penstemon, agoseris, aster, draba, Indian paintbrush, Mariposa lily, sego lily, wild onion, larkspur, yarrow, death camas, evening primrose, and iris.

Larkspur is a poisonous plant to cattle during spring and is common in Basque Hills, Lone Mountain, and the low foothills east of the main ridge.

Wetland plants occurring in the Pueblo Slough area east of the county road include saltgrass, sago pondweed, Baltic rush, spikerush, Nevada club rush, cattail, and three-square and hardstem bulrush.

Important woody riparian species include mountain alder, woodrose, narrowleaf cottonwood, golden currant, aspen, elderberry, redosier dogwood, and several species of willow. Over two-thirds of the streamside riparian habitat is in poor or fair condition (refer to Table 2). Some of the lower stream reaches lose water due to a porous cobble streambottom which limits the growth of riparian vegetation. Other streams in the lower reaches are deeply incised with a narrow streambottom and unstable banks, limiting recovery to more acceptable conditions.

TABLE 2

PUEBLO-LONE MOUNTAIN ALLOTMENT STREAMSIDE RIPARIAN HABITAT INVENTORY SUMMARY

Stream Name	Miles Poor	Miles Fair	Miles Good	Miles Exc.	Total Miles
McLean Creek		0.55			0.55
Unnamed Creek	0.20	0.30			0.50
Hells Canyon Creek		1.95			1.95
Oregon End Creek		1.24			1.24
East Creek	2.80	0.80			3.60
Stonehouse Creek		2.35	2.00		4.76
Little Stonehouse Creek		0.70	1.00	0.83	2.53
Bodesto Creek		1.65	0.70		2.35
Rough Creek		1.65			1.65
Five Draw Creek		0.75			0.75
Starr Creek	1.55	0.55			2.10
Sesena Creek ²	2.25	0.25	0.25		2.75
Willow Creek		3.75			3.75
Little Willow Creek	0.40	0.80	0.40		1.60
Little Cottonwood Creek	6.03	3.20	3.25	0.85	12.83
Catlow Creek ¹		2.25	1.65		3.90
Reynolds Creek ¹			0.40		0.40
Pueblo Creek ¹			0.85		0.85
Red Point Creek ¹		0.90			0.90
Cherry Creek		1.00	1.80		1.60
Van Horn Creek	0.70	3.20	3.60	2.60	10.10
Reaux Creek ³	1.34	0.40			1.74
Arizona Creek		1.04			1.04
Colony Creek ¹	2.14				2.14
TOTALS	17.41	30.38	14.85	3.78	66.42
PERCENT OF TOTAL	26.2%	45.7%	22.4%	5.7%	100.0%

¹ Burned by wildfire in 1994.² Referred to as Horse Creek on U.S. Geological Survey (USGS) topographic maps.³ Referred to as Sesena Creek on USGS topographic maps.

Meadows occur on 60 acres of public land around springs and along streams, primarily in the upper and mid-elevations of the Pueblos. Gullies are present in some meadows, lowering the water table thus reducing productivity and creating a situation favoring encroachment of invading plant species. A partial inventory of meadows on public lands in the allotment conducted in 1984 (Burns District Files) found meadows mostly in poor to fair condition with gullies up to 4 feet deep in four out of fifteen meadows sampled. However, other meadows not sampled, such as Stergen Meadows, have gullies exceeding 4 feet in depth. Big sagebrush has encroached on some meadows, reducing their area. Iris, an unpalatable species to most wildlife and cattle (Eckert 1983), has also become a dominant species in some meadows where it was only a minor component in past years. Quaking aspen, found along drainages and in moist places at higher elevations, is used by many species of wildlife as cover. Aspen add vegetative diversity to an area having few other trees or tall shrubs.

Nine species of plants found within the allotment are on list 2 of the Oregon Natural Heritage Program Publication; "Rare, Threatened and Endangered Plants and Animals of Oregon." These species are threatened with extirpation or presumed to be extirpated from the State of Oregon. A listing of threatened, endangered and sensitive plants can be found in Appendix 7.

Several species of weeds (undesirable plants) or exotic (not native) plants are present within the allotment. Some of the exotics are considered to be noxious weeds by the Oregon Department of Agriculture (ODA) because they are undesirable, troublesome, and difficult to control. The noxious weed species that occur within the allotment are: yellow starthistle, perennial pepperweed, halogeton, whitetop, Canada thistle, Scotch thistle, bull thistle, and kochia. All of the noxious weeds were established on disturbed areas, bare ground, or roadsides and some have started to invade native rangeland. Halogeton and kochia have become so abundant that control is not feasible in the near future. The others are still in localized areas or in low enough numbers that control or complete eradication from some sites is still possible.

The Burns District, BLM has analyzed the control of noxious weeds in EA OR-020-8-52 which looks at both mechanical and chemical means for controlling weeds that pose an economic and environmental threat to public land on the Burns District. The decision record, dated March 19, 1993, states that those two methods will be employed to treat noxious weed infestations on a case-by-case basis subject to the District Manager's approval and where mitigation measures are followed.

Other exotic species that occur within the allotment but are not considered to be noxious weeds include: dandelion, tumbleweed, tumbledustard, mullein, burr buttercup, clasping peppergrass, and cheatgrass.

H. Research Natural Areas/Areas of Critical Environmental Concern

Three areas within the allotment have been designated as Research Natural Areas (RNAs) RNAs/ACECs (refer to Appendix 8). The RNAs are also designated as ACECs. RNAs are areas established to protect significant terrestrial and aquatic ecosystems and areas having endangered, threatened or sensitive plant species for use in research and education. ACECs are areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historical, cultural or visual values, fish and wildlife resources, other natural systems or processes or to protect life and provide safety from natural hazards.

The Pueblo Foothills RNA/ACEC includes 2,520 acres on the east side of the Pueblo Mountains. It contains five State sensitive plant species and numerous Great Basin plant species common to Nevada, that extend north into Oregon. The two key elements for which the RNA/ACEC was designated are the narrowleaf cottonwood/Mormon tea community complex and shadscale/spiny hopsage/budsage community complex.

The 1,521-acre Tum Tum Lake RNA/ACEC contains a low-elevation playa lake and a salt desert shrub community as the key elements. sea purslane (Sisuvium vervucosum) and iodine bush (Allenrolfea occidentalis) are two State sensitive plant species found in this RNA/ACEC. Many alkali tolerant plant species are found near the lake.

The 440-acre Long Draw RNA/ACEC contains a stand of Indian ricegrass and needleandthread needlegrass in a big sagebrush association as the key element.

I. Fish and Wildlife

The Pueblo Mountains and adjacent Pueblo Valley contain wildlife habitat with a good interspersions of forage, cover, and water. Small meadows, aspen groves, riparian habitat, and talus slopes are found within the major plant communities, providing a mosaic of wildlife habitat types rich in wildlife species diversity. One hundred seventy species of birds, 47 species of mammals, 18 species of amphibians and reptiles, and 3 species of fish may be found in the allotment. Nongame species range from spadefoot toad, horned lark, black-throated sparrow, black-tailed jackrabbit, and antelope ground squirrel at lower elevations in Pueblo Valley up to high, steep rimrocks that contain such cliff and rock dwelling species as bushy-tailed woodrat, small-footed myotis (bat), golden eagle, canyon and rock wren. Aspen, thin-leafed alder, and curleaf mountain mahogany provide habitat for cavity nesting birds, such as common flicker, Williamson's sapsucker, and for noncavity nesting and foraging birds.

Riparian habitat attracts yellow warbler, dipper, bushtit, ruby-crowned kinglet, common garter snake, Townsend's pocket gopher, and many other species.

There are indications that beaver were present along the larger streams flowing off the east side of the Pueblo Mountains. Beaver were still present at one small site along the south fork of Little Cottonwood Creek in 1986, but they may now be absent from the Pueblo Mountains. Raptors include nesting golden eagle, prairie falcon, common kestrel, red-tailed hawk, great horned owl, and others. Ferruginous hawk (a Federal Category 2 candidate for listing as Threatened or Endangered) and Swainson's hawk are occasionally observed but no nests have been located. Bald eagle, a threatened species; and American peregrine falcon, an endangered species; are migrants that pass over the area. Bald eagle also forage in the Pueblo Valley area during winter and spring but sightings are uncommon.

Wetlands occurring in the allotment are primarily found east of the county road in Pueblo Valley. Wetlands in the Pueblo Slough drainage, although small, are heavily used by migrant ducks, geese, shorebirds, and other aquatic dependent birds. Eighty acres of marsh and ponds are found on public lands in this drainage with 60 acres of wetlands managed to enhance wildlife habitat. Another 110 acres of playas seasonally attract aquatic birds. Tum Tum Lake, a 440-acre highly alkaline ephemeral lake in Pueblo Valley, is heavily used by aquatic birds when it contains water.

An estimated 200 to 300 Canada geese and 150 to 250 dabbling ducks winter in the Denio area. These birds move between waterfowl habitat and cultivated fields east of the Pueblo Mountains and in nearby Nevada. Common breeding aquatic birds include mallard, pintail, cinnamon teal, American avocet, willet, killdeer, western sandpiper, and great blue heron. Waterfowl production on public lands is usually from 6 to 10 broods annually. Occasional nesting by Canada geese, greater sandhill crane, greater egret, and black-crowned night heron occurs. Western snowy plover, which is on the ODFW's Threatened Species List, and white-faced ibis, a Federal Category 2 candidate species, have occasionally been observed near Pueblo Slough playas, but use is infrequent.

Rincon Reservoir and other small impoundments also attract migrating aquatic birds.

Chukars, introduced in the area circa 1950's, are an abundant game bird over much of the allotment. The abundant rimrock, riparian areas, and steep topography provide excellent habitat. Valley quail can be found near brushy drainages, riparian areas, and adjacent uplands. Ten sage grouse leks, or strutting grounds, have been located within the allotment (refer to Appendix 9 - Wildlife). Five are near Lone Mountain, three are on the east side of the Pueblos, and two are on Oregon End Table. Sage grouse are a Federal Category 2 candidate species being considered for listing as Threatened or Endangered. They frequent sagebrush covered benches, meadows, and low sagebrush covered ridges. Nesting areas are usually under big sagebrush cover within 2 miles of a lek. Mourning dove nest in the area from spring through summer. Common snipe are found near springs, meadows, and wetland areas.

Kit fox, which is on the ODFW's Threatened Species List and western burrowing owl, a Federal Category 2 candidate species, may be found in Pueblo Valley and other low elevation range in the allotment. Northern sagebrush lizard, a Federal Category 2 candidate species, are found at lower elevations.

Mule deer summer in the mid- and upper elevations and winter at lower elevations in and out of the allotment. Mule deer use aspen, curllleaf mountain mahogany, tall big sagebrush, bitterbrush, and broken topography as escape cover and thermal cover during summer. Water is well-distributed except for the area east and south of Lone Mountain. Aspen, curllleaf mountain mahogany, bitterbrush, sagebrush species, and many forbs are available as forage on the summer range. Winter range is on the lower slopes of the Pueblos. Dominant vegetation species on deer winter range are big sagebrush, low sagebrush, Mormon tea; and, where wildfire has occurred, cheatgrass, Sandberg bluegrass, and bluebunch wheatgrass. Rough topography and shrubs provide winter thermal cover.

ODFW has management objectives to have 1,200 summering deer and 1,200 wintering deer in the allotment (refer to Appendix 9 for mule deer winter range locations).

ODFW estimates 400 pronghorn antelope summer on the allotment. Key summer ranges are the Ten Cent Meadow and Stergen Meadow areas, near the Roux Place, near Rincon seeding and burns along the west slope of Catlow Rim.

Low sagebrush and low-growing big sagebrush are dominant cover types on both winter and summer antelope range. Mountain meadows are used by summering pronghorn antelope. The crested wheatgrass seeding near Rincon is also used by summering pronghorn antelope. The distribution of water is fair with some areas of otherwise suitable summer range without water.

Wintering pronghorn antelope move into the southwestern part of the allotment from Nevada and adjoining areas in Oregon. ODFW biologists' February counts of pronghorn antelope usually number around 500, but have periodically increased to over 2,000 (1976, 1979, 1984, 1989, and 1993) along the Nevada-Oregon state line. During harsh winters with deep snow, many of these animals from Nevada and adjoining areas in Oregon move northward near Oregon End Table. Pronghorns make heavy use of sagebrush species during the winter months (Mason 1952, Bayless 1969) (refer to Appendix 9 for pronghorn antelope winter range locations).

California bighorn sheep, a Federal Category 2 candidate species, were native to most of eastern Oregon but were eliminated by overshooting and by diseases and parasites introduced by domestic sheep (Van Dyke 1978). California bighorn sheep were reintroduced by ODFW in the Pueblo Mountains from 1976 to 1983. An estimated 120 bighorn sheep presently reside along the Pueblo Mountains (refer to Appendix 9 for bighorn range locations). Bighorns were also released near Lone Mountain in 1992 to supplement a small population in that area. They range near Lone Mountain and north and west, out of the allotment. The population is doing well and continues to increase. Water for bighorns is abundant in the Pueblo Mountains, but is limited on Lone Mountain and along Catlow Rim.

Cougar, bobcat, and coyote are the three larger predators that occur on the allotment.

Alvord chub, brown trout, and Lahontan cutthroat trout are the three species of fish present in the allotment. Lahontan cutthroat trout, a Federal and Oregon threatened species, was introduced into Van Horn Creek by ODFW in 1976 and 1980 (refer to Appendix 9). Brown trout were illegally released into Van Horn Creek prior to 1983, and are now abundant in the lower reaches, possibly displacing the Lahontan cutthroat trout. Alvord chub are present in the lower reaches of Van Horn Creek and Pueblo Slough and are a Federal Category 2 candidate as well as an Oregon Sensitive Species. The Alvord chub is the only native fish species in Van Horn Creek and is found only in the Alvord Basin of Oregon and in a small population in an adjacent part of Nevada.

An aquatic habitat inventory (modified ODFW methodology) was conducted in 1992 to assess habitat condition and identify limiting factors for Lahontan cutthroat trout and Alvord chub in Van Horn Creek.

The inventory identified seven stream reaches for Van Horn Creek. The high amount of swift water habitat types relative to the low amount of pool habitat types, summarized in Table 3, reflects the overall steep, rocky topography that governs much of the stream. Reaches 1 through 3 are in the area identified as Lahontan cutthroat trout habitat in Appendix 9; however, in 1992 fish (species unidentified) were observed from the bank only in Reach 1.

Table 3

Stream Reach Locations and Major Habitat Types of
Van Horn Creek, June 1992

Stream reach	Distance from mouth (m)	Major habitat types (% of reach length)	Pool habitats (% of reach length)
1	0 - 1100	Rapid with protruding boulder (87%)	Plunge pool (4.5%) Backwater pool (0.3%) Dammed pool (0.4%)
2	1100 - 3578	Cascade over boulder (89%)	Plunge pool (0.8%) Backwater pool (0.4%) Dammed pool (0.2%)
3	3578 - 5158	Dry (100%)	--
4	5158 - 6990	Cascade over boulder (51%) Dry (35%)	Plunge pool (2.0%) Lateral scour pool (0.7%)
5	6990 - 9137	Rapid with protruding boulder (42%) Cascade over boulder (35%)	Plunge pool (1.7%) Straight scour pool (0.1%) Backwater pool (0.2%) Isolated pool (0.2%) Lateral scour pool (0.3%)
6	9137 - 10590	Cascade over boulder (58%) Dry (25%)	Plunge pool (1.8%) Backwater pool (0.2%) Dammed pool (0.2%)
7	10590 - 12106	Dry (53%) Cascade over boulder (44%)	Plunge pool (0.3%)

The small size of the stream, small amount of pool habitat, and preponderance of swift habitat, with boulders as dominant features, limit the amount of potential habitat that would be available for the fish. The discontinuous surface flow in all reaches except Reach 1 and the amount of fine sediments are also assumed to limit the amount of currently available fish habitat (Table 4).

The riffle-run areas of stream-resident Lahontan cutthroat trout habitat are optimally relatively silt free and rocky (U.S. Fish and Wildlife Service (USFWS) 1995). Only Reach 1 currently provides riffle-run habitat that meets these conditions. Other reaches either have little or no riffle-run habitat or have riffle-run habitats with a high percentage of fine sediments (Table 4).

Water temperatures measured at the time of the inventory were above the average but within the range ($13^{\circ}\text{C} \pm 4^{\circ}\text{C}$) of summer temperatures considered optimal for the Lahontan cutthroat trout (USFWS 1995). The inventories were conducted in mid- to late June 1992 and are probably not indicative of the lowest flow or warmest conditions of the stream (Table 4); however, previous water quality measurements indicate that water temperatures fall within Lahontan cutthroat trout tolerances (see Water Quality section). Alvord chub are able to tolerate warmer temperatures than can Lahontan cutthroat trout.

Table 4

Habitat Parameters for Stream Reaches of Van Horn Creek, June 1992

Stream Reach	Width (m)	Depth (cm)	Silt or fine organic in run-riffles (%) [*]	Rocky substrate in run-riffles (%) ^{**}	Water Temp. at survey point (C) ^{***}	Dry units (% of reach)
1	1.6	13.3	11.3	79.4	16.0	0.4
2	1.7	15.0	0.0	0.0	13.6	0.4
3	Dry	Dry	0.0	0.0	Dry	100.0
4	1.6	11.7	18.0	57.0	No Meas.	34.6
5	0.8	13.8	43.0	20.9	17.0	14.8
6	1.0	7.5	33.2	21.4	15.6	25.2
7	0.6	3.7	0.0	0.0	16.7	54.7

* Percent of silt or fine organic substrate, weighted for habitat unit length; glides, riffles, and riffle-pool habitats only.

** Percent of substrate with gravel or larger sized substrate, weighted for habitat unit length; glides, riffles, and riffle-pool habitats only.

*** Water temperatures were taken at different times of the day and may not reflect the maximum water temperatures for the stream.

Portions of the upper reaches of Van Horn Creek have little woody riparian cover and severe bank erosion. A streambank stability inventory was completed on 1.7 miles of Van Horn Creek in August 1982. Of the 1.7 miles inventoried, 0.4-mile was rated as poor, 1.1 were rated as fair, and 0.2-mile was rated as good condition. Historically, this area was subject to heavy grazing, resulting in poor condition aquatic habitat. However, management over the past 3 years (with the exception of some trespass problems in 1994) has resulted in significant improvement to the riparian and aquatic habitats. No fish are currently present in this area.

The lower 2.5 miles of Van Horn Creek are in a steep-walled, rocky, brushy canyon that limits cattle access. This canyon has stable banks and a good riparian cover.

The stability of the streambanks is also reflected in the 1992 aquatic habitat inventory. Streambanks were classified as nonerodible, vegetated but stable, or actively eroding (or vegetated but unstable). Stream-resident Lahontan cutthroat trout habitat is optimally well-vegetated with stable streambanks (USFWS 1995). The lower reaches (Reaches 1-3) have predominantly nonerodible or vegetated but stable streambanks, whereas the upper reaches (Reaches 4-7) have predominantly eroding or unstable streambanks (see Table 5).

Table 5

Streambank Condition, Van Horn Creek, June 1992

Reach	Nonerodible (m and %)*	Vegetated stable (m and %)	Actively eroding or Vegetated unstable (m and %)
1	1142.0 (24.6%)	2804.5 (60.4%)	695.5 (15.0%)
2	2416.0 (48.6%)	2388.0 (48.0%)	172.0 (3.5%)
3	0.0 (0.0%)	3160.0 (100.0%)	0.0 (0.0%)
4	48.0 (1.3%)	438.0 (11.9%)	3201.0 (86.8%)
5	31.8 (0.7%)	498.5 (21.9%)	3350.3 (77.4%)
6	19.6 (0.7%)	197.5 (6.8%)	2699.1 (92.6%)
7	0.0 (0.0%)	240.0 (8.5%)	2591.2 (91.5%)

* Classification was made for right and left banks separately; therefore, total length of banks is twice the length of the stream reach

Macroinvertebrate samples were collected from Van Horn Creek in 1982, 1985, and 1986 in the lower reach near the mouth of the canyon. The samples were sent for analyses to the Aquatic Ecosystem Analysis Laboratory of the U.S. Forest Service - Intermountain Region in Provo, Utah.

The analyses indicated that for all 3 years the samples had an abundance of taxa tolerant to organic enrichment and sedimentation (see Table 6). Clean water species were generally scarce, indicating a limited amount of suitable spawning substrate. The number of shredders, indicators of good quality riparian habitat, were low in 1982 and 1985 but higher in the summer sample of 1986. The Biotic Condition Index, a measurement of stream potential based on macroinvertebrate community tolerances and physical and chemical characteristics of the waterway, ranged from 74-82. This indicates conditions that were good but could improve through improved instream habitat, water quality, and/or riparian habitat, particularly in regard to sediment reduction. Biomass generally ranged just over 1.0 gm/m², with a biomass of 2.5 gm/m² being recorded in summer 1986. This level of biomass probably limits fish productivity and is indicative of instream structure, pool quality, and pool quantity that could improve.

Table 6

Macroinvertebrate Analysis for Van Horn Creek Near Mouth of Canyon

Year	Taxa composition	Biotic Condition Index	Biomass (gm/m ²)
1982	Organic enrichment and sedimentation	79	1.2
1985	Organic enrichment and sedimentation	82	1.1
1986	Organic enrichment and sedimentation		
- May		74	1.2
- September		75	2.5

Three years of macroinvertebrate analyses indicate that Van Horn Creek has the potential to support a moderate trout fishery. Riparian habitat appears to be in good condition immediately above macroinvertebrate sample sites. However, sedimentation is adversely impacting the aquatic habitat, decreasing primary productivity and food supply for fish.

Van Horn Creek has alkalinity, pH and water temperature levels favorable for fish productivity. See Water Quality section for more detailed descriptions.

Minimum values for DO are 5.0 ppm for adult salmonid survival and 7.0 ppm for salmonid egg incubation. DO values in Van Horn Creek range from 6.0 ppm to 10 ppm. This would indicate that Van Horn Creek has at least adequate DO levels for adult salmonid survival; however, low levels of DO during the spawning season (recorded as low as 6.0 ppm as early as June) could potentially reduce reproduction success in this stream.

At this time, it is unknown if Reaches 4 through 7 have the potential to support fish. Reach 7 has an exceptionally high gradient, with a mean slope of 16.0 percent. Reaches 4-6, however, have slopes that range from 4.5-6.0 percent and would possibly be able to support Lahontan cutthroat trout if the habitat were available. The Alvord chub, being a small species and found in slower waters, would probably be restricted to the low gradient Reach 1 (2.7 percent slope). At the least, improvements in the current condition of the aquatic and riparian habitat in Reaches 4-7 would probably benefit the downstream Lahontan cutthroat trout and Alvord chub fisheries.

J. Cultural Resources

Archaeological field surveys for cultural resource sites have resulted in the inventory of approximately 1-percent of the Pueblo-Lone Mountain Allotment. Such surveys usually have been associated with construction of range projects, although archaeological research is the basis for the more important findings. Prehistoric and historic properties of varying significance are known to exist in this relatively unstudied region, and many more are expected to be present in the area.

The prehistoric rock art of the area is considered to be one of the "special features" of the Rincon WSA. Most prehistoric sites indicate seasonal subsistence land uses throughout the last 5,000 years, while historic remains typify early 20th-century homesteading activities.

K. Visual Quality and Recreation

The Pueblo-Lone Mountain area is popular for hunting, backpacking, horseback riding, sightseeing (botanical, wildlife, and geological), and camping. There is an estimated 8,500 recreation visitor days per year. The majority of the recreational use takes place within the Pueblo Mountains. Hunting in the area is for mule deer, pronghorn antelope, bighorn sheep, and upland game birds, such as chukar, quail and sage grouse. Also, some driving for pleasure, day hiking, wildlife observation, and vehicle camping occurs in the allotment. Angling is closed in Van Horn Creek due to the presence of the Lahontan cutthroat trout. Recreation use of the Pueblo-Lone Mountain area is limited to late spring through fall because of winter conditions. See the Wilderness section for additional recreation information.

Backpacking is a popular activity occurring along 22 miles of the Oregon High Desert National Recreation Trail through the Pueblo Mountains. This trail is marked through the Pueblo Mountains by rock cairns. The trail is also part of the Oregon State Recreational Trails System. This trail represents one segment of a much larger trail system that will eventually go between the Canada and Mexico borders staying mostly on arid lands.

The allotment falls within two management category areas based on visual quality. The main north-south ridgeline of the Pueblos and everything east to the Fields/Denio Road is within a Class II management category.

A Class II designation places restrictions on an area and allows for modifications of the landscape, but these modifications are not to be evident to the casual observer.

The area west of the Pueblo ridgeline is within Class IV management. Class IV allows for modification of the landscape to dominate the viewshed, but should simulate with natural landscape features.

The class determinations were made by using a matrix that considered visual sensitivity, scenic quality, and seen distance zones as key factors.

L. Wilderness

The Pueblo-Lone Mountain Allotment covers all or portions of four WSAs. The WSAs include Pueblo Mountains (2-81), Rincon (2-82), Basque Hills (2-84), and Hawk Mountain (1-146A). Of the 273,857 acres within the allotment (including private lands), 211,278 acres or 77 percent are within WSAs (refer to Appendix 8).

The WSAs are to be managed in a manner so as not to impair their suitability for preservation as wilderness (Federal Land Policy and Management Act (FLPMA), October 21, 1976). The policy of BLM is to manage the areas in accordance with the "Interim Management Policy and Guidelines for Lands Under Wilderness Review" document (see Appendix 10, for the General Rule of the Interim Management Policy (IMP)). Grazing, mining, and mineral leasing uses that existed on the date of approval of FLPMA (October 21, 1976), may continue on lands under wilderness review in the same manner and degree as on that date, even if this impairs wilderness suitability. These are the "grandfathered" uses, protected by the "manner and degree" clause of Section 603(c) of FLPMA. These uses are regulated to ensure that they do not cause unnecessary or undue degradation of the lands.

A complete description of each of the four affected WSAs can be found in the Final Oregon Wilderness EIS. The Hawk Mountain WSA is administered by the BLM Lakeview District but overlaps into Burns District and is covered here because a portion of it is within the Pueblo-Lone Mountain Allotment. The following is a brief description of the affected WSAs:

Pueblo Mountains WSA (2-81): This WSA covers 72,690 acres of which 69,022 acres of public land are within the allotment. BLM has recommended 23,399 acres be designated as wilderness. It is located near the Oregon-Nevada state line southwest of Fields, Oregon, and west of Denio, Nevada. The study area contains two high ridgelines and their associated foothills which run parallel to each other along the eastern and western boundaries. Pueblo Peak, the prominent feature on the eastern ridgeline, is the second highest point in southeastern Oregon, reaching an elevation of 8,632 feet. The remainder of this ridge averages over 7,200 feet while the western ridge has an elevation range of 6,640 to 8,420 feet. Between the ridges are high mountain meadows and basins (ranging from 5,500 to 6,800 feet) and the headwaters of several major drainages having perennial stream flows. Only the watershed containing Denio Creek, on the southeastern corner of the WSA, is not included within the Pueblo-Lone Mountain Allotment.

Wilderness Values

Naturalness: The Pueblo Mountains WSA is in a natural condition. The unnatural developments of the WSA are not substantially noticeable within the study area as a whole. Because the steep topography of much of the WSA precludes development in many locations and because the diversity of the landscape screens many of the developments, the unnatural influences on the natural quality of the study area are slight.

Existing unnatural developments within the study area include six reservoirs, six developed springs, three fences totaling 4 miles, 33 miles of vehicle ways, 18 areas of past mining activity, one powerline totaling 4 miles, four ditches totaling 4 miles, and one cemetery. Generally, the developments are scattered, screened by the topography, and can be seen from only small, localized areas.

Opportunities for Solitude: Pueblo Mountains WSA has outstanding opportunities for solitude due to the large size, configuration and topography of the area. The Pueblo Mountains' diverse landscape includes rugged ridges with steep escarpments, high-elevation basins and meadows, and deeply-cut drainages. All of these physical features enhance the opportunities for solitude within the area and provide numerous settings for a visitor to find seclusion.

Opportunities for Primitive and Unconfined Recreation: Outstanding opportunities for primitive and unconfined types of recreation in the Pueblo Mountains WSA include day hiking, backpacking, hunting, horseback riding, sightseeing, wildlife viewing, and photography.

Special Features: The Pueblo Mountains WSA contains several special features which contribute to the value of the area as wilderness. These include distinctive geological, botanical, wildlife, and scenic qualities.

Rincon WSA (2-82): The Rincon study area includes 103,965 acres of which 91,760 acres of sagebrush-covered public land are within the allotment. This WSA lies due west of the Pueblo Mountains WSA. Of the 91,760 acres within the allotment, BLM has recommended 11,593 acres be designated as wilderness. The main physical features of this WSA are Oregon End Table, a large flat-topped plateau; Lone Mountain, a gently-sloping mountain dissected by numerous small drainages and marked by several distinctive rock outcroppings on the southwest; and Catlow Rim, a steep, west-facing escarpment which runs for 12 miles along the western and northwestern side of the study area. Lone Mountain is the highest point in the WSA reaching an elevation of 6,903 feet. With the exception of the extreme northern and northwestern portions of the study area, all of the Rincon WSA is included within the Pueblo-Lone Mountain Allotment.

Wilderness Values:

Naturalness: The Rincon WSA appears to be in a relatively natural condition. None of the human-made features within the study area is substantially noticeable and most of the features can be seen from only a very small portion of the WSA. With the exception of two areas where these features are somewhat concentrated, a visitor to the study area would not feel that people had a significant impact on the natural quality of the WSA.

The Rincon WSA contains 75 existing unnatural developments. Of this total, 40 are water developments for livestock or wildlife, including 26 reservoirs, 8 wildlife guzzlers, and 6 spring developments. There are 32 vehicle ways, totaling approximately 52 miles. One of the developments is an old mining prospect, and the remaining developments are interior fences, totaling 23 miles.

Opportunities for Solitude: Opportunities for solitude in the Rincon WSA are outstanding. These opportunities are enhanced by the area's large size and diverse topography, particularly the rolling hills found within much of the area, the rugged rock outcroppings around Lone Mountain and the rims and elevation differences associated with Catlow Rim and Oregon End Table. The only vegetative screening is the western juniper on the south side of Lone Mountain around Juniper Spring and Granite Spring. For the WSA as a whole, vegetative screening is insufficient to enhance opportunities for solitude.

Opportunities for Primitive and Unconfined Recreation: The area provides outstanding opportunities for primitive forms of recreation, including day hiking, camping, backpacking, horseback riding, hunting, observing wildlife, sightseeing, and photography.

Special Features: There are several features in the Rincon WSA which add to the value of the area as wilderness, including wildlife, geology, cultural, and vegetative features. The existing human-related uses of the land within the WSA are primarily oriented toward livestock grazing and recreation.

Basque Hills WSA (2-84): This study area lies due west of the Rincon WSA and contains 141,410 acres of which 26,410 acres of public land are within the allotment. BLM has not recommended any of this WSA to be designated as wilderness.

The Basque Hills WSA is a high desert area with some foothills and rimrock areas. The landscape is predominantly flat to very gently rolling. Most of the study area consists of broad, flat expanses and a few low foothills. The major topographic features of the area include Fish Fin Rim in the northwest corner (Lakeview District), Red Butte and another rock outcropping also referred to as Fish Fin Rim near the center of the WSA, Coyote Rim and the Catlow Valley in the northeast, and the Basque Hills, an area of scattered, rolling hills in the southeast. These features are separated by large expanses of predominately flat terrain.

Wilderness Values

Naturalness: Basque Hills WSA is in a relatively natural condition. None of the unnatural features within the study area are substantially noticeable and most of the features can be seen from only a very small portion of the study area.

The study area contains 42 existing unnatural developments. Of this total, 20 are water developments including 16 reservoirs, 2 developed wells, and 2 wildlife guzzlers. There are 19 vehicle ways totaling about 77 miles, 2 fences totaling about 31 miles, and the remains of an old horse trap. (Only the two guzzlers, two wells, and three ways are located within the Pueblo-Lone Mountain Allotment portion of this study area.)

Opportunities for Solitude: Opportunities for solitude in the Basque Hills WSA are outstanding. These opportunities are enhanced by the area's large size and the topographic screening provided by rolling hills. The low, broad hills and rims in the central, eastern, and northwestern portions of the WSA provide outstanding opportunities for solitude. Although sagebrush is present throughout the area, it is low growing and is insufficient to provide vegetative screening.

Opportunities for Primitive and Unconfined Recreation: The area does not provide any outstanding opportunities for primitive forms of recreation. Opportunities for day hiking, backpacking, hunting, and sightseeing are only of moderate or low quality due to the lack of topographic features, vegetative diversity, and availability of water.

Special Features: Special features within the Basque Hills WSA add to the value of this area as wilderness. These include vegetation and wildlife.

Hawk Mountain WSA (1-146A): The Hawk Mountain WSA contains 69,640 acres of which 24,086 acres of public land are within the allotment. BLM has recommended all of this acreage to be designated as wilderness. The study area is located south of the Rincon WSA. The prominent physical features of the study area include Hawk Mountain, the highest point in the WSA at 7,234 feet, and Hawksie Walksie, a large, flat, dry lake basin. With the exception of two other smaller peaks, most of the study area consists of low, rolling sagebrush and bunchgrass covered hills. The terrain gradually rises from the eastern and western sides of the area to the higher points near the center of the area. Only the eastern third of the study area (24,086 acres) is located within the Pueblo-Lone Mountain Allotment.

Wilderness Values

Naturalness: The Hawk Mountain WSA is in a very natural condition, as are the areas immediately surrounding it (with the exception of a seeding to the north). The quality and diversity of the native bunchgrass communities throughout the entire area are exceptional.

Unnatural features are few and scattered. There are five small reservoirs and waterholes and 6 miles of fence separating the BLM Lakeview and Burns Districts and one fenced spring enclosure in the northeast. Twenty-five miles of vehicle ways, many of which are revegetating to native bunchgrasses and shrubs and are difficult to locate on the ground, are noticeable only in their immediate vicinity; the two waterholes in Hawksie Walksie basin are visible from a greater distance because they are located in a large, open playa within view of the surrounding hills. In a narrow draw in the north are two concrete water storage tanks, a dry waterhole and a presently unused pipeline which originates on private land on the north slope of Acty Mountain. One spring in the northwest portion of the WSA has been minimally developed and fenced for wildlife.

Opportunities for Solitude: The opportunity for solitude is outstanding throughout the entire study area. The north, northeast, and eastern portions of the WSA have mountainous terrain with draws, valleys, ridges, and canyons among which one can easily isolate oneself. The far western portion has less dramatic topography but still offers the visitor ample solitude due to its large area, its sinks, draws, and low rimrock. The lakebed, although flat and open, creates a feeling of isolation because hills, mountains, and plateaus surround and enclose it.

Opportunities for Primitive and Unconfined Recreation: There are outstanding opportunities for a wide range of primitive recreation activities including day hiking, backpacking, horseback riding, hunting, and camping. The eastern half of the WSA offers the more rugged and challenging hiking terrain, while the central and western portions offer the most opportunities for wildlife observation.

Special Features: Special features that add to the value of wilderness in this WSA include scenery, geology, and vegetation.

M. Economic and Social Character

Six ranches have grazing permits for this allotment. This grazing use is important to their ranching operations and income. Livestock production is the base of the area's economy. Alfalfa and grass hay are grown for winter livestock feed on small irrigated tracts of private land in Pueblo Valley and at Oregon End Ranch. Mineral exploration has occurred in the area, but no mines are currently active within the allotment. Geothermal research is occurring and this energy resource has a potential of becoming a commercially viable activity.

The arid environment of the Pueblo Valley area restricts land use and population. Besides ranching, the dominate land use is recreation. The greatest influx of people occurs during the various hunting seasons. The area is extremely remote and has a low population. Fields, Oregon, with a year-round population of 11, and Denio, Nevada, with a year-round population of 24 are the largest communities in the immediate vicinity. There is one paved county road north of the Oregon/Nevada state line and the closest incorporated town is more than 100 miles distant. Children attend grade school at Fields and Denio. High school students attend boarding school about 112 miles from home. The closest full-service community for residents of the area is Burns, Oregon, which is about 125 miles northwest of Fields. Winnemucca, Nevada, also serves the residents of this area. The majority of the population comprises owners and employees of ranches headquartered in the Pueblo Valley. Total population of the area is about 110.

Other uses in the area include hunting, hiking, scenic viewing, environmental education, backpacking, and guiding. Besides livestock grazing, these are the only other activities that add to the economy of the area.

III. DESCRIPTION OF ALTERNATIVES

A. Introduction

This section describes the allotment management goals and objectives and provides a detailed description of each alternative. The management goals and objectives developed for this allotment are within the scope and intent of previous planning documents. Final development of a management plan for the Pueblo-Lone Mountain Allotment will be based on the capability of the selected alternative to meet the objectives and goals established for the allotment. A monitoring plan, which will track the success of the selected alternative in achieving the established objectives and goals is developed as part of this EA, (Refer to Appendix 11).

Various grazing systems have been described in the Andrews EIS. The proposed grazing systems consider various resource needs and issues and are designed for this allotment which has extremes in topography and uneven distribution of water. It is intended to meet the allotment objectives and comply with the FLPMA which states in part, "...the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy..."

Care was taken regarding management remedies/actions not to impair wilderness values as outlined in the Interim Management Policy and Guidelines for Lands Under Wilderness Review document.

B. Pueblo-Lone Mountain Allotment Management Goals

The following is a list of allotment goals that were developed by BLM with assistance from the Pueblo-Lone Mountain Work Group. These broad goals are as follows:

WILDLIFE AND FISH:

1. Maintain and/or enhance populations of wildlife species and their habitats.
2. Implement management practices which result in good aquatic habitat along all perennial streams.

Note: It is recognized that some streams will not recover within 10 years of implementation, however, we will strive to maintain an upward trend on these areas.

3. Improve aquatic habitat conditions in upper elevation stream reaches of Van Horn Creek from poor to fair or better condition.
4. Maintain and/or enhance populations of Threatened, Endangered and Federal Category 2 candidate animal species and their habitats (listed in Appendix 12).

SPECIAL VEGETATIVE COMMUNITIES:

1. Improve the structure and reproductive potential of special vegetative communities (bitterbrush, curlleaf mountain mahogany, aspen, and alder).
2. Maintain and enhance populations of Special Status plant species and their habitats (listed in Appendix 7).

SPECIAL MANAGEMENT AREAS:

1. Maintain and integrate objectives for RNAs/ACECs into the Pueblo-Lone Mountain AMP.
2. Protect and enhance the primary wilderness values of naturalness, solitude, and primitive and unconfined recreation, along with scenic, ecological, scientific, geological, and historical supplemental values identified in the Pueblo Mountains, Rincon, Basque Hills, and Hawk Mountain WSAs. Do not impair WSA suitability for preservation as wilderness. Manage under BLM's Interim Management Policy and Guidelines.

WATER QUALITY:

1. Maintain or improve surface water quality to meet or exceed water quality requirements for all beneficial uses consistent with Oregon DEQ Nonpoint Source Assessment and Management Plan.

RIPARIAN AND MEADOWS:

1. Implement management practices which maintain riparian areas and meadows presently in good condition, and cause an improving trend on all other riparian areas and meadows resulting in good or better condition values.

BIOLOGICAL DIVERSITY:

1. Maintain a full spectrum of ecosystems, biological communities, habitats, and their ecological processes.

SOCIOECONOMIC:

1. Work toward improving and supporting a viable local community through land uses (i.e., recreation, livestock grazing, wildlife, and agriculture).

Note: To achieve this goal, cooperation and coordination with State and local laws and land use plans will be done to the extent consistent with BLM policy.

C. Pueblo-Lone Mountain Allotment Objectives

1. Streamside Riparian Vegetation Objective

For streamside riparian areas in the allotment, the riparian objective is as follows:

The riparian condition of the sites with medium to high potential that are currently rated poor or fair will be in a condition to be rated good or excellent within 15 years after implementation of this plan. (Refer to Appendix 13.)

Riparian areas will have sufficient vegetation to filter sediments from the uplands and upstream and to protect streambanks from erosive forces of surface waters. The composition of the vegetation communities will provide the habitats to support the native biodiversity of the area. The health of the vegetation will be such that the communities are self-sustaining.

2. Upland (Nonriparian and Nonstreamside Riparian) vegetation objective is as follows:

Upland sites will have a stable or improving ecological condition within 15 years of implementation of this plan.

Upland areas will have sufficient vegetation to support infiltration, maintain soil moisture storage, and stabilize soils. The vegetation will provide the habitats that support the native biodiversity of the area. The health of the vegetation will be such that the communities are self-sustaining. The ecological condition of the uplands will provide a full spectrum of seral stages to provide a diversity of plant communities and wildlife habitats.

3. Meadow (wet and dry meadows) vegetation objective is as follows:

Deteriorating upland meadow sites will be improving while other upland meadow sites will be stable or improving within 10 years of implementation of this plan.

Upland meadow sites will have sufficient vegetation cover to support infiltration, maintain soil moisture storage, and stabilize headcuts and gullies. The vegetation will provide the habitats that support the native biodiversity of the area. The health of the vegetation will be such that the communities are self-sustaining.

D. Alternative A (Historical Use)

1. Livestock grazing would remain at a level similar to historical use. No changes would be implemented.
2. No new developments would be constructed.
3. Livestock grazing periods of use would not change.

- a. Grazing in the spring-summer pastures would begin April 16. The period of use would be April 16 - October 30.
 - b. In the winter pastures, grazing would begin December 1. The period of use would be December 1 - February 28.
 - c. The Pueblo Valley and Pueblo Slough Pastures would continue to be excluded from livestock use.
4. Livestock grazing systems would not change.

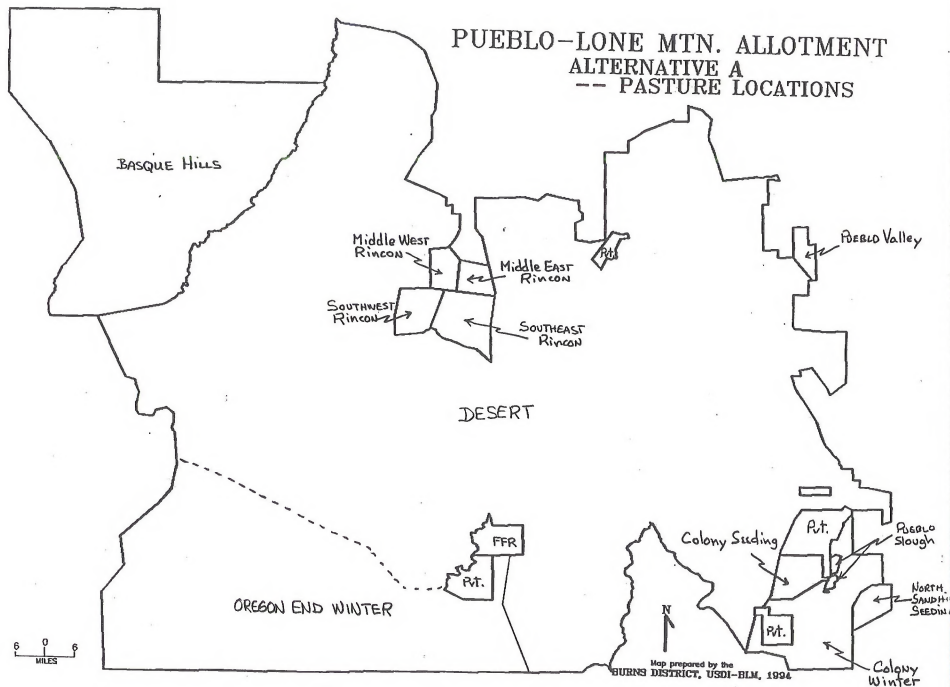
Pasture Use Alternative A

Pasture	Year 1	Year 2
Basque Hills	04/16-10/30	04/16-10/30
Desert	04/16-10/30	04/16-10/30
SE Rincon Seeding	04/16-10/30	04/16-10/30
SW Rincon Seeding	04/16-10/30	04/16-10/30
ME Rincon Seeding	04/16-10/30	04/16-10/30
MW Rincon Seeding	04/16-10/30	04/16-10/30
Colony Winter	12/01-02/28	12/01-02/28
Colony Seeding	12/01-02/28	12/01-02/28
N Sandhills Seeding	12/01-02/28	12/01-02/28
Oregon End Winter	12/01-02/28	12/01-02/28
Pueblo Valley	EXCLUDED	EXCLUDED
Pueblo Slough #1	EXCLUDED	EXCLUDED
Pueblo Slough #2	EXCLUDED	EXCLUDED

NOTE: Refer to Page 29 for pasture locations.
Refer to Appendix 14 for grazing formula table.

5. Grazing levels and distribution would not change.
6. Available livestock forage in the short term would be 17,964 AUMs. This figure is based on the current forage allocation for livestock in the allotment without the 14 percent voluntary nonuse agreement.
7. Any future changes in grazing management (including allocation levels and grazing systems) would be based on monitoring data and formal allotment evaluations.

PUEBLO-LONE MTN. ALLOTMENT ALTERNATIVE A -- PASTURE LOCATIONS



Map prepared by the
 BURNS DISTRICT, USDI-BLM, 1994

E. Alternative B (Preferred Alternative)

Range improvements, changes in periods of use, and changes in the grazing system would be implemented to achieve improvements in riparian, upland, and other resource values.

1. Range Improvements

New pasture fences and water developments would be constructed. Refer to Page 44 for project locations.

a. Fencing

Twenty-two miles of fence would be constructed. Unless otherwise noted under a specific project, all fences under this alternative would be a 3-wire design constructed to BLM standards with the bottom wire smooth and 18 inches above the ground. Total height of the top wire would not exceed 42 inches with the spacing between the top and middle wire being a minimum of 12 inches. Post spacing would be 30 feet with two stays between posts. The metal posts would be selected to blend in with the landscape. The design would permit easy movement of wildlife both over and under the fences. Rock cribs would be constructed at gates and corners. The fencelines would not be cleared of brush or other vegetation. All construction debris would be removed from the project areas upon completion of construction. The BLM would supply all labor and materials needed for fence construction. Maintenance of the proposed fences would be completed by the livestock permittees. Each of the specific proposed fence projects are discussed below:

Oregon End Fence: This fence is proposed to follow an existing temporary fenceline. The fence would be upgraded to a permanent fence which would separate the Pueblo Ridge Pasture spring range from the Desert Pasture summer range used by the Oregon End Ranch. This fence, in conjunction with the Rincon-Oregon End fence, would completely separate the Pueblo Ridge Pasture from the Desert Pasture. It is located in the south-central portion of the allotment, and is approximately 4 miles in length.

The fence would begin on the northern end at the quarter corner of Section 36, T. 40 S., R. 33 E., and Section 1, T. 41 S., R. 33 E., and proceed southward for 1.5 miles to the powerline right-of-way directly east of the southern end of the Oregon End Ranch private property. It would then proceed southward for 2.5 miles along the powerline right-of-way to the Oregon-Nevada state line fence where it would end. This section of fence would contain four gates spaced at approximately 1-mile intervals.

This fence would be just outside of the Pueblo Mountains WSA for approximately 1-mile. Rubber-tired vehicles would be used along the existing fenceline/powerline trail to transport fence materials and construct the fence. No new roads would be constructed.

Rincon-Oregon End Fence: The Rincon-Oregon End fence would separate the Pueblo Ridge Pasture, containing the riparian areas, from the Desert Pasture which is dryer and contains one small unfenced riparian area (Winnemucca Spring). This project is approximately 3.5 miles in length.

This 3.5-mile long fence would be constructed on the west side of the Rincon-Oregon End Road (the Rincon-Oregon End Road currently is the boundary between the Rincon and Pueblo Mountains WSAs). This fence would tie into the existing fence in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 36, T. 39 S., R. 33 E., and proceed in a southward direction along the road for approximately 2.75 miles to where the Rough Creek Road intersects the Rincon-Oregon End Road. This portion of fence will be constructed outside of the Rincon WSA and within the disturbed area of the Rincon-Oregon End Road. From this point, the fence will proceed approximately due south for about .25-mile within the Rincon WSA where it will end by being tied into an existing rim at the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 14, T. 40 S., R. 33 E. This fence would be just outside both the Rincon and Pueblo Mountain WSAs for approximately 2.75 miles. Gates would be placed along the fence about a mile apart. Rubber-tired vehicles would be used along the existing road to transport fence materials and construct the fence. No new roads would be constructed.

North Colony Fence: The North Colony fence would separate the spring use Pueblo Ridge Pasture from the proposed North Colony Winter Pasture area east of the Fields-Denio County Road. This fence is approximately 1.5 miles in length.

The fence would be constructed on the east side of the county road between the Colony Ranch and Red Point Ranch outside any WSA. This fence would create an additional winter use pasture (North Colony Winter Pasture). The fence would tie into the private fence of Red Point Ranch at the NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 23, T. 40 S., R. 35 E., and proceed southwest paralleling the county road right-of-way to the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 27, T. 40 S., R. 35 E., omitting the approximately .25-mile of fenced private property in between and tying off on the Colony Ranch private fence. Two gates would be placed at existing trails along the fence. Materials would be delivered to the construction site along existing roads.

Starr Winter Fence: The Starr winter fence would separate the spring use Pueblo Ridge Pasture from the proposed Starr Winter Pasture. This fence would create a new pasture (Starr Winter Pasture). This fence is approximately 7 miles in length.

This fence would be constructed on the west side of the Fields-Denio County Road, beginning near Fields, Oregon, at the quarter corner of Sections 35 and 36, T. 37 S., R. 32½ E., and proceeding southward along private land boundary and county road right-of-way crossing the Domingo Pass Road where a cattleguard would be placed, then proceed southwest toward but staying outside the Pueblo Mountains WSA to the SW¼SE¼ of Section 11, T. 39 S., R. 34 E., then west to the Roux Place private property and Fenced Federal Range (FFR) at the NW¼NW¼ of Section 15, T. 39 S., R. 34 E. An additional 100 feet of fence and a cattleguard would be installed at the SE¼NE¼ of Section 9, T. 39 S., R. 34 E., between the Roux Place FFR and the Starr Place FFR and closing off the entire Starr Winter Pasture from the Pueblo Ridge Pasture. Gates would be placed at about 1-mile intervals along the fence. Cattleguards would be placed at two locations on the Domingo Pass Road. Fence material would be delivered to the construction site along existing roads whenever possible. Some cross-country travel by vehicles would be required during construction.

Catlow Gap Fences: The proposed Catlow Gap fences would separate the Basque Hills Pasture from the Desert Pasture. In the past, livestock have had unrestricted access in several places to the Desert Pasture. This fence consists of two gap fences totaling approximately 1-mile.

These gap fences would be constructed within the Rincon WSA on Catlow Rim. The northern gap fence would be constructed to close off the Raz Lewis Trail which is located at the NW¼ of Section 26, T. 38 S., R. 32 E. This gap fence would be approximately .25-mile long. The southern gap fence would be constructed in Section 19, T. 39 S., R. 32 E., and Sections 23 and 24, T. 39 S., R. 31 E. This gap fence would be approximately .75-mile long. Each gap fence would have a gate constructed to facilitate livestock movement. Fence materials would be delivered to the site using a helicopter and no vehicular travel to or from the construction site would be permitted.

Long Draw Gap Fence: This fence would separate the Desert Pasture from the Oregon End Winter Pasture. An old functional fence, which would be reconstructed, is presently located at this site. This is approximately .25-mile of fence.

Approximately 150 feet of the fence would lie within the Rincon WSA, while the remaining portion would be outside the WSA. The fence would be located at the SE¼NW¼ of Section 20, T. 41 S., R. 33 E. One gate would be constructed on the road into Long Draw.

Fencing materials would be delivered to the site by vehicle using the existing road. No vehicle travel would be allowed within the Rincon WSA.

Pueblo Mountain Gap Fences: This project would consist of three permanent gap fences (Cherry Creek, Colony Creek, and Arizona Creek) which would separate the east face of Pueblo Mountain from the higher elevation meadows west of Pueblo Mountain within the Pueblo Ridge Pasture. The purpose of the fence would be to restrict livestock use on the wet meadows and Van Horn Basin until later in the spring when soils are drier.

Three temporary gap fences now in place following a wildfire which burned the east face of Pueblo Mountain in 1994 are scheduled to be removed by 1997. An analysis of temporary impacts was completed in EA OR-026-94-71 as part of a fire rehabilitation effort in 1994. The gap fences total .6-mile of fence within the Pueblo Mountains WSA.

The first gap fence would be constructed with barbed wire and steel posts and would be located at the ridgeline between Cherry Creek and Van Horn Basin in the E½SW¼ of Section 30, T. 40 S., R. 35 E. This fence would be a permanent fence because of the lack of access to the site. The second gap fence would be constructed with barbed wire and steel posts and would be located at the ridgeline between Colony Creek and Van Horn Basin in the SW¼SW¼ of Section 19, T. 40 S., R. 35 E. This fence would have the wire let down when livestock were not in the area. The third gap fence would also be constructed with barbed wire and steel posts and would be located just east of the ridgeline between the Arizona Creek and Little Cottonwood Creek drainages in the NW¼SW¼ of Section 6, T. 40 S., R. 35 E. This fence would also have the wire let down when livestock were not in the area.

Prefabricated steel panels would be placed at gate sites to serve as braces. Fencing materials would be delivered to the Cherry Creek and Colony Creek sites by helicopter and to the Arizona Creek site by vehicle using the existing road. No vehicle travel will be allowed within the Pueblo Mountains WSA. The Colony Creek and Arizona Creek fences would have the wires attached to the fence prior to livestock entering the area and the wires would be removed from the posts and rolled up following livestock removal.

Tum Tum Lake Enclosure Fence: This fence would create an enclosure around the Tum Tum Lake RNA/ACEC. No livestock grazing would be licensed within the fenced in portion of the RNA/ACEC following completion of the project. Because of the present lack of forage for livestock in this area, there would be no decrease in active livestock preference as a result of this project. The proposed fence would be approximately 3 miles in length. This project is outside any WSA.

The fence would begin on its northeast corner located at the NW¼SW¼ of Section 26, T. 39 S., R. 35 E., and proceed west just south of the Whitehorse County Road along the BLM and private boundary line (excluding the gravel pit), for approximately 1.5 miles where it would corner. From this point, the fence would proceed south on the east side of the Fields-Denio County Road for approximately 1.5 miles to the section corner of Sections 33 and 34, T. 39 S., R. 35 E., and Sections 3 and 4, T. 40 S., R. 35 E., where it would tie into an existing private fence. Gates would be placed on several existing trails. Materials would be delivered to the construction site on existing roads.

East Pueblo Corral: The East Pueblo Corral would be fenced to create a gathering pen on the east side of Pueblo Ridge to facilitate gathering of livestock. Use in this corral would be limited to overnight stays while livestock herds are separated and either taken over Domingo Pass to the Desert Pasture or removed from the allotment. Approximately 1.5 miles of fence would be constructed. This project is outside any WSA.

The corral area is currently fenced on the east and north sides. New fence would be constructed on the west and south sides to complete the corral. The fence would begin in its southeast corner at the SW¼NE¼ of Section 8, T. 39 S., R. 34 E., and proceed northwesterly to the ridgeline, then follow the ridgeline north to the allotment boundary between the Fields Basin Allotment and the Pueblo-Lone Mountain Allotment at NW¼NE¼ of Section 6, T. 39 S., R. 34 E., where it would tie into the existing fence. Several gates would be constructed in locations that would facilitate easy livestock movement into and from the corral. Most materials would be delivered to the construction site on existing roads. Some materials may have to be delivered by helicopter on the ridgeline.

b. Pipelines and Wells

Six and three-quarter miles of pipeline and associated troughs would be constructed. Unless otherwise noted under a specific project, all pipeline projects would be constructed with 2-inch plastic pipe buried to a depth of 18 to 30 inches using a caterpillar tractor with a ripper tooth on the rear which has a specially designed pipe-laying shoe attached. This pipe-laying shoe guides the plastic pipe into the ground at the required depth. A backhoe would be used to level and, occasionally, dig the trench. Maintenance of the pipeline, including the troughs, would be assigned to the livestock permittees.

Two wells and one watering trough and pipeline relocation are also part of this alternative. Unless otherwise noted under a specific project, all well projects would consist of a 6-inch well hole drilled to provide for a static water level sufficient to ensure the pump would not run dry if pumped for extended periods of time. Wells would be cased as appropriate to ensure that the shaft would not cave in. Wells would be equipped with a propane tank, propane powered generator, and submersible pump of sufficient size to operate the well efficiently. A 30-foot bottomless type trough and a dirt tank would be located at each watering site.

Wells would be drilled and cased by a contracted well driller. The well drilling contractor and equipment may be at the site for up to 3 weeks during drilling activities. The drill rig, construction equipment, and a crawler tractor would access the sites during construction which would result in a two track trail into the sites. These same trails would be used to access the sites once construction is completed.

South Rincon Pipeline: The South Rincon pipeline would provide water for the east portion of the Desert Pasture which has limited available and reliable water. This project would also improve livestock distribution within the Desert Pasture.

The project would consist of an extension from the existing Rincon pipeline system, which now waters the Rincon seeding pastures. The extension would begin at the existing water tank located in the NW¼NW¼ of Section 25, T. 39 S., R. 33 E., and proceed in a southward direction to approximately the NW¼NW¼ of Section 36, T. 39 S., R. 33 E., where a spur line would be run to the southeast corner of the Southeast Rincon Seeding Pasture. A water trough and dugout would be constructed at this location. Beginning again where the spur line begins, the main stem of the pipeline would continue south and run within the existing disturbed area of the Oregon End-Rincon Road which is the boundary between the Pueblo Mountains and the Rincon WSAs for approximately 2.25 miles. At the SE¼NE¼ of Section 14, T. 40 S., R. 33 E., the pipeline would proceed aboveground for approximately .25-mile within the Rincon WSA to a water trough site. The water trough site would be located at an area which has shallow soils with bedrock near the surface and sparse vegetation. Total length of the pipeline would be 4.25 miles, of which .25-mile would be within the Rincon WSA and classified as a temporary development. Should the area be designated wilderness, these temporary structures would be immediately removed. To allow for two additional water sites within the Desert Pasture, the southeast and southwest corner fences of the Rincon seeding pastures would be modified to allow livestock to access water in those areas. The pipeline system would be designed to follow existing roads as much as possible.

West Oregon End Pipeline: The West Oregon End pipeline would water the south end of the Desert Pasture which would be used by the Oregon End Ranch and has limited available and reliable water. This project would also improve livestock distribution within the Desert Pasture.

The project would consist of a pipeline running west from the existing Oregon End Well which now waters the area south of the Oregon End Ranch. The pipeline would begin at the existing well located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 14, T. 41 S., R. 33 E., and proceed in a westerly direction, staying east of the Rincon WSA until it would reach the road, and then south of the road, to approximately the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 20, T. 41 S., R. 33 E., where the pipeline would end. A water trough and dugout would be constructed at this location. Total length of the pipeline would be 2.5 miles, of which none would be within the Rincon WSA. As part of this project, a water trough site now within the Rincon WSA would be relocated outside the WSA. The pipeline system is designed to follow existing roads as much as possible.

Long Draw Well: The Long Draw Well would be developed to provide reliable water for livestock and wildlife within the Oregon End Winter Pasture. This well is needed to implement a winter use system within the pasture. The Oregon End Winter Pasture is currently watered from a trough located inside the Rincon WSA and a limited amount of water from Winnemucca Spring. The proposed Long Draw gap fence would close the Oregon End Winter Pasture off from the trough, creating the need for the well. This project would be located outside any WSA, but in close proximity to the Hawk Mountain and Rincon WSAs, at the SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 19, T. 41 S., R. 33 E., in Long Draw. This project would impact approximately 2 acres.

Basque Hills Well: The Basque Hills Well would be developed to provide reliable water for livestock and wildlife within the Basque Hills Pasture. This well is needed to implement a rotation system within the pasture to provide for periodic critical growing period rest of herbaceous species. This project would be located outside any WSA, but in close proximity to the Basque Hills and Rincon WSAs, at the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 12, T. 39 S., R. 31 E., in Funnel Canyon. This project would impact approximately 3 acres.

Gusher Well Trough Relocation: This project involves the removal of an existing trough and rehabilitation of a dirt tank pond within the Basque Hills WSA. The well, which is located approximately 20 feet inside the Basque Hills WSA, would be equipped with a camouflaged propane tank and generator. A pipeline would be constructed from the well to an area some 150 yards outside the Basque Hills WSA where a 30-foot bottomless water trough and dirt tank would be constructed. The pipeline within the WSA would be buried. This well, along with its associated developments, represents an existing use within the

WSA and is a recognized grandfathered use. By relocating the trough and dirt tank, most impacts within the WSA would be removed to an area outside the WSA. This project would be enacted under exception number 4 found in the general rule of the IMP. (Refer to Appendix 10.)

This project would be located at the NW¼NE¼ of Section 29, T. 38 S., R. 32 E., within the Basque Hills Pasture.

The dirt tank would be constructed using a dozer blade on a crawler tractor. The tractor would access the area by an existing road to Gusher Well and then follow the pipeline disturbed area to the project site. The trough would be constructed by BLM crews and a contracted cement truck would be used to form the bottom of the tank with cement. This action would occur outside any WSA.

c. Prescription Burning or Vegetation Treatment

Lone Mountain Prescribed Burn: The Lone Mountain prescribed burn would increase biological diversity on 2,500 acres on Lone Mountain within the Desert Pasture. The burn would be designed to create a mosaic of burned and unburned areas which would improve habitat for antelope, bighorn sheep, and sage grouse. The area is limited for water and, therefore, would not be very beneficial for livestock forage production purposes; however, livestock would use the area to some extent.

The project area would be located in Sections 2, 3, 4, 9, 10, 11, 14, 15, 16, N¼ of 22, and the N¼ of 23, T. 40 S., R. 32 E., an area of approximately 6,000 acres. This burn would be located entirely within the Rincon WSA. Over several years within the project area, there would be a prescribed burn conducted that would create a mosaic of burned and unburned areas. A total of 2,500 acres would be burned within the project area. Areas of mountain big sagebrush are the target areas for burning. On Lone Mountain these areas are inclusions within a Wyoming big sagebrush area. After the burn, temporary fence would be constructed to allow the plant community to establish itself and gain much needed vigor. The fence would be removed after a minimum of two growing seasons following the burn.

A site-specific burn plan would be developed prior to implementing the project. The burn plan would address resources needed to conduct the burn as well as suppression forces required, if necessary. The burn plan would also consider such things as weather and burning condition parameters within which the burn would be conducted.

The protection fence would be a 3-wire design constructed to BLM standards with the bottom wire smooth and 18 inches above the ground. Total height of the top wire would not exceed 42 inches with the spacing between the top and middle wire being a minimum of 12 inches. Post spacing would be 30 feet with two stays between posts. The fence would permit easy movement of wildlife both over and under the fence. The metal posts would be selected to blend in with the landscape. Prefabricated metal braces would be used in the place of rock cribs at gates and corners. The fenceline would not be cleared of brush or other vegetation. Materials would be delivered to the site by helicopter if no roads or ways were present within a reasonable distance from the project site. The fence would be constructed without the use of mechanized equipment. All construction debris would be removed from the project area upon completion of construction. Maintenance of the proposed fence would be completed by the livestock permittees.

Rincon Seeding Brushbeating/Discing: The Rincon seeding brushbeating or discing would remove invading sagebrush from 3,800 acres of the 4,293 acres of crested wheatgrass seedings. Approximately 490 acres would remain untreated to benefit wildlife species which use the area. All four Rincon seeding pastures would be treated under this alternative. The project area would be within all, or portions of, Sections 10, 13, 14, 15, 20, 21, 22, 23, 24, 26, 27, 28, and 29 of T. 39 S., R. 33 E. While the brushbeating would remove sagebrush over 6 inches in height, the discing would also remove plants under 6 inches in height. Both treatments would rejuvenate the seeding. This area was originally planted in the early 1950's and is one of the oldest producing crested wheatgrass seedings in Oregon. By improving the condition of the seedings, we would be able to remove livestock grazing pressure from native pastures in the allotment. This project is outside any WSA.

Brush control would be done using a rubber-tired or crawler tractor pulling a brushbeater which cuts off the aboveground portion of the brush. Discing would be done by the same manner only a disc would be pulled and roots of the brush would be cut. The discing would break apart existing crested wheatgrass plants making for a more dense and productive stand over time.

Colony Seeding Brushbeating or Discing/Reseeding: This project would cover 1,000 acres of the 1,295 acres within the Colony Seeding Pasture. This area was originally treated in 1956 and 1957 when it was plowed and disced to prepare a seedbed and seeded to crested wheatgrass. One thousand acres were originally treated. The Colony Seeding Pasture is currently unproductive due to the invading sagebrush that is outcompeting the herbaceous understory for nutrients and available water. The invading brush would be removed through brushbeating or discing and then the area would be reseeded to a

mixture of crested wheatgrass and native species suited for the area. This project would allow for removal of livestock grazing pressure from native range.

The project area would be located outside any WSA in Sections 3, 4, 9, and 10, T. 41 S., R. 35 E., in the Colony Seeding Pasture. Brushbeating or disking would be done using a rubber-tired or crawler tractor pulling a brushbeater or disc across the pasture. Reseeding would be done with a rangeland drill which would be pulled by a rubber-tired or crawler type tractor. The seeding rate would be 5 pounds of crested wheatgrass and 3 pounds of native grass and brush species per acre.

2. Livestock grazing period of use would change.
 - a. In the Colony Seeding Pasture, grazing would begin March 1. The period of use would be March 1 - March 31.
 - b. In the Basque Hills and Pueblo Ridge Pastures, grazing would begin April 1. The period of use would be April 1 - June 15.
 - c. In the Southeast Rincon Seeding Pasture, grazing would begin on even years on April 1 and on odd years on May 1. The period of use would be April 1 - May 15 on even years and May 1 - June 15 on odd years.
 - d. In the Southwest Rincon Seeding Pasture, grazing would begin on even years on May 16 and on odd years on April 1. The period of use would be May 16 - June 15 on even years and April 1 - April 30 on odd years.
 - e. In the Middle East Rincon Seeding Pasture, grazing would begin on even years on April 1 and on odd years on September 5 or when the livestock were gathered from the Desert Pasture, whichever came first. The period of use would be April 1 - April 10 on even years and September 5 - September 15 on odd years.
 - f. In the Middle West Rincon Seeding Pasture, grazing would begin on even years on September 5 or when the livestock were gathered from the Desert Pasture, whichever came first. On odd numbered years grazing would start on April 1. The period of use would be September 5 - September 15 on even years and April 1 - April 10 on odd years.
 - g. In the Desert Pasture, grazing would begin on June 16. The period of use would be June 16 - September 15.
 - h. In the winter use pastures, grazing would begin on November 1. The period of use would be November 1 - February 28.
 - i. The Pueblo Valley, Pueblo Slough, and Tum Tum Pastures would be excluded from livestock use.

3. Livestock grazing systems would change.

- a. The season of use for the Colony Seeding Pasture would be changed from winter use to early spring use. The season of use would be changed to begin March 1 and end March 31, annually. The stocking level for this pasture would be determined following the proposed vegetation treatments.
- b. The Basque Hills Pasture would have a shortened season of use to provide for plant health. A rotation system centered around water would be implemented. Livestock herding and control of livestock waters would be used to control livestock grazing rotations within the pasture on or about May 15, annually, to ensure plant health requirements are met. Livestock would graze this area from April 1 to June 15 each year. The recommended stocking rate for the Basque Hills Pasture is 400 cattle.
- c. A new pasture would be created (Pueblo Ridge) from the east side of the Rincon-Oregon End Road to the Fields-Denio County Road. Construction of the Rincon-Oregon End and Oregon End fences would enable a spring only grazing system to be implemented where this early pasture would be used from April 1 to June 15. Utilization on woody riparian species would be limited to 30 percent or less, 4 out of 5 years. At no time would utilization exceed 50 percent on woody riparian species. Use in this pasture could be made up to June 30, if conditions are favorable and utilization levels are not exceeded. Some livestock herding would be done to accomplish utilization objectives on riparian vegetation in Van Horn Basin and to keep livestock above the 5,000-foot elevation level after May 15. The recommended stocking rate for this pasture is 2,052 cattle.
- d. The Desert Pasture would be reduced to half of its original size. Construction of the Rincon-Oregon End, Oregon End, and the Catlow gap fences would enable a deferred grazing system to be implemented where use would occur from June 16 to September 15. Some livestock herding may be necessary if utilization on the limited bitterbrush stand in the northern portion of the pasture becomes a problem. The recommended stocking rate for this pasture is 2,505 cattle.
- e. The Southeast Rincon Seeding and Southwest Rincon Seeding Pastures would be used together under a rotation system. The Southeast Rincon Seeding Pasture would be used from April 1 to May 15 one year, followed by use from May 1 to June 15 the next year. The Southwest Rincon Seeding Pasture would be used from May 16 one year, followed by use from April 1 to April 31 the next year. The recommended stocking rate for these pastures is 200 cattle.
- f. The Middle East Rincon Seeding and Middle West Rincon Seeding Pastures would be used as holding pastures during turnout and the end of grazing. The Middle East Rincon Seeding Pasture would be used from April 1

to April 10 one year, followed by use from September 5 to September 15 the next year. The Middle West Rincon Seeding Pasture would be used from September 5 to September 15 one year, followed by use from April 1 to April 10 the next year. The recommended stocking rate for these pastures is 805 cattle.

- g. Existing winter use pastures (Colony Winter and North Sandhills Seeding) would continue to be used for winter grazing at the same use level; however, the season of use would begin earlier and run from November 1 to February 28 annually. The recommended combined stocking rate for these pastures is 300 cattle.
- h. Two areas (Starr Winter and North Colony Winter Pastures) would be changed to winter use. Construction of the Starr Winter fence and the North Colony Winter fence would enable a winter-only grazing system to be implemented where use would be from November 1 to February 28. The recommended stocking rate for the Starr Winter Pasture is 300 cattle and the North Colony Winter Pasture is 100 cattle.
- i. The Oregon End Winter Pasture would be reduced in size. That area below the Oregon End Ranch from the Oregon End Fence west to Long Draw would become part of the Desert Pasture. The remaining Oregon End Winter Pasture (Long Draw) would continue to be winter use. Livestock would graze this area from November 1 to February 28 annually. The recommended stocking rate for the Oregon End Winter Pasture is 200 cattle.
- j. After fencing the Tum Tum Lake area, it would become excluded from livestock use. The Pueblo Valley and Pueblo Slough Pastures would remain excluded from livestock.

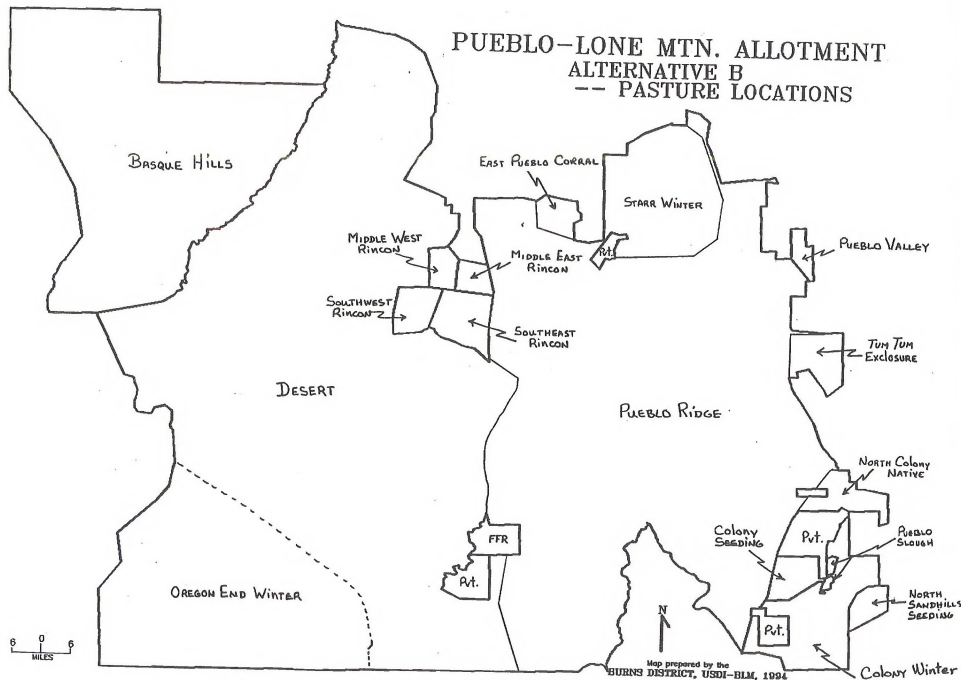
Pasture Rotation Alternative B

Pasture	Year 1	Year 2
Colony Seeding	03/01-03/31	03/01-03/31
Basque Hills	04/01-06/15	04/01-06/15
Pueblo Ridge	04/01-06/15	04/01-06/15
Desert	06/16-09/15	06/16-09/15
SE Rincon Seeding	04/01-05/15	05/01-06/15
SW Rincon Seeding	05/16-06/15	04/01-04/30
ME Rincon Seeding	04/01-04/10	09/05-09/15
MW Rincon Seeding	09/05-09/15	04/01-04/10
Colony Winter	11/01-02/28	11/01-02/28
N Sandhills Seeding	11/01-02/28	11/01-02/28
Starr Winter	11/01-02/28	11/01-02/28
North Colony Winter	11/01-02/28	11/01-02/28
Oregon End Winter	11/01-02/28	11/01-02/28
Tum Tum Lake Enclosure	EXCLUDED	EXCLUDED
Pueblo Valley	EXCLUDED	EXCLUDED
Pueblo Slough #1	EXCLUDED	EXCLUDED
Pueblo Slough #2	EXCLUDED	EXCLUDED

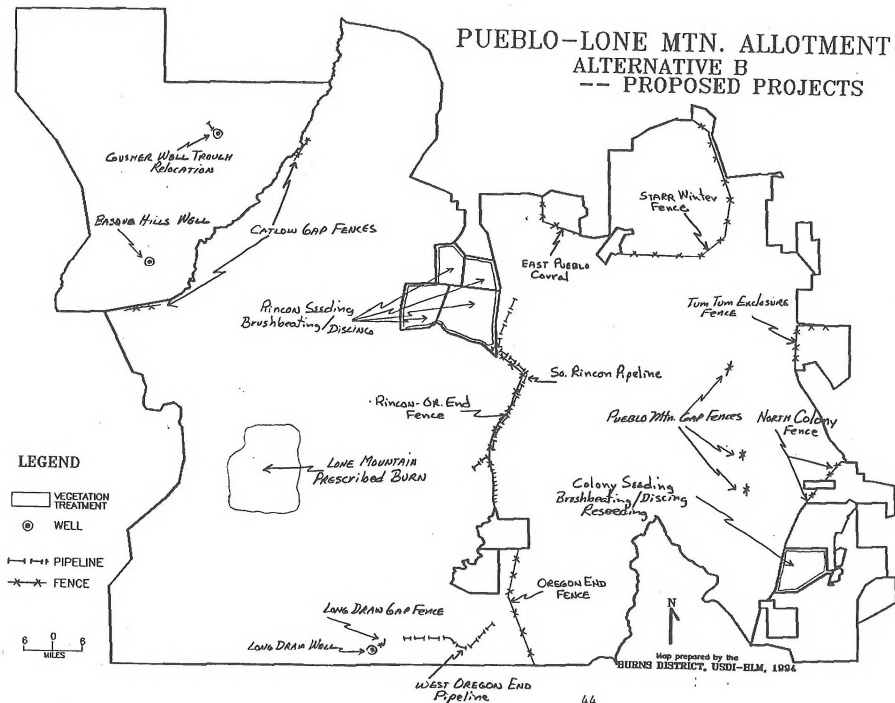
Note: Refer to Page 43 for pasture locations.
Refer to Appendix 15 for grazing formula table.

4. Grazing levels and distribution would not change substantially. Timing of livestock grazing in specific areas would change. No increase in livestock grazing use would occur within any WSA.
5. Available livestock forage in the short term would be 15,448 AUMs. (Current allocation is 17,964 AUMs.)
6. Any future changes in grazing management (including allocation levels and grazing systems) would be based on monitoring data and formal allotment evaluations.

PUEBLO-LONE MTN. ALLOTMENT ALTERNATIVE B -- PASTURE LOCATIONS



PUEBLO-LONE MTN. ALLOTMENT ALTERNATIVE B -- PROPOSED PROJECTS



F. Alternative C (Additional Projects)

This alternative is similar to the preferred alternative but would intensify livestock management by creating two additional pastures. Projects in addition to those in the preferred alternative are 2.5 miles of pipeline extension, two wells, 1,700 acres of disking and seeding, and 9.5 miles of fencing.

Range improvements, changes in periods of use, and changes in the grazing system would be implemented to achieve improvements in riparian, upland, and other resource values.

1. Range Improvements

New pasture fences and water developments would be constructed. This alternative would have two additional pastures in addition to those described in Alternative B. It would also have additional water developments. The following additional projects (refer to Page 54 for these project locations) would be proposed under this alternative:

a. Fencing

Thirty-two miles of fence (approximately 9.5 more miles than required under Alternative B) would be constructed. Only those fences that are in addition to the preferred alternative are described under this alternative.

Unless otherwise noted under a specific project, all fences under this alternative would be a 3-wire design constructed to BLM standards with the bottom wire smooth and 18 inches above the ground. Total height of the top wire would not exceed 42 inches with the spacing between the top and middle wire being a minimum of 12 inches. Post spacing would be 30 feet with two stays between posts. The metal posts would be selected to blend in with the landscape. The design would permit easy movement of wildlife both over and under the fences. Rock cribs would be constructed at gates and corners. The fencelines would not be cleared of brush or other vegetation. All construction debris would be removed from the project areas upon completion of construction. The BLM would supply all labor and materials needed for fence construction. Maintenance of the proposed fences would be completed by the livestock permittees. Each additional proposed project is discussed below:

Desert Division Fence: The Desert Division fence would be constructed to split the Desert Pasture described in Alternative B (except for that area which would become the Black Rock Pasture under this alternative) into two pastures. They would be the North Desert and South Desert Pastures. This fence would be approximately 7 miles in length.

This fence would be constructed from the Rincon seedings fence beginning at the section corner of 16, 17, 20, and 21 T. 39 S., R. 33 E., then westward to the SW¼NW¼ of Section 17, T. 39 S., R. 32 E., where it would tie into Catlow Rim on the west end. The east portion of the fence (approximately 2.5 miles) would be outside any WSA. Where the fence crosses the Box Canyon-Fields Basin Road, approximately .25-mile north of Box Canyon, it would enter the Rincon WSA until it ends at Catlow Rim (approximately 4.5 miles). Gates would be placed where the fence crosses a road and in 1-mile intervals elsewhere along the fence.

Black Rock Drift Fence: The Black Rock Drift fence would be constructed to create a new pasture (Black Rock Pasture) south of the Rincon seedings. The Black Rock Pasture would be used in conjunction with the Pueblo Ridge Pasture.

The entire 2.5 miles of fence would lie within the Rincon WSA. The fence would begin at the Rincon seeding pasture fence at the NE¼SE¼ of Section 29, T. 39 S., R. 33 E., and proceed in a southerly direction for 2.5 miles to the NE¼NW¼ of Section 8, T. 40 S., R. 33 E., where it would tie into a rim which extends to the south an additional mile. Several gates, spaced 1-mile apart, would be constructed along the fence.

Fencing materials would be delivered to the general vicinity by vehicle using existing roads and placed within the WSA by helicopter or packhorses. No motorized vehicle travel would be allowed within the Rincon WSA.

b. Pipelines and Wells

Eight and three-quarter miles of pipeline and associated troughs (2.5 miles more than in Alternative B), four wells (two more than in Alternative B), and a pipeline and trough relocation project would be completed. Only those pipelines and wells that are in addition to the preferred alternative are described under this alternative.

Unless otherwise noted under a specific project, all pipeline projects would be constructed with 2-inch plastic pipe buried to a depth of 18 to 30 inches using a caterpillar tractor with a ripper tooth on the rear, which has a specially designed pipe-laying shoe attached. This pipe-laying shoe guides the plastic pipe into the ground at the required depth. A backhoe would be used to level and occasionally dig the trench. Maintenance of the pipeline, including the troughs, would be assigned to the livestock permittees.

Unless otherwise noted under a specific project, all well projects would consist of a 6-inch well hole drilled to provide for a static water level sufficient to ensure the pump would not run dry if pumped for extended periods of time. Wells would be cased, as appropriate, to ensure that the shaft would not cave in. Wells would be equipped with a propane tank, propane powered generator, and submersible pump of sufficient size to operate the well efficiently. A 30-foot bottomless type trough and a dirt tank would be located at each watering site.

Wells would be drilled and cased by a contracted well driller. The well drilling contractor and equipment may be at the site for up to 3 weeks during drilling activities. The drill rig, construction equipment, and a crawler tractor would access the sites during construction which would result in a two track trail into the sites. These same trails would be used to access the sites once construction is completed.

Southwest Rincon Pipeline Extension: The Southwest Rincon pipeline extension would supply water to both the South Desert Pasture and the Black Rock Pasture. The pipeline would supply water to an area which is limited by available and reliable water now. This project would also improve livestock distribution within both pastures.

The project would consist of an extension from the existing Rincon pipeline system which now waters the Rincon seedings. The extension would begin at the existing water trough located in the NW¼NW¼ of Section 8, T. 39 S., R. 33 E., and proceed in a southward direction to approximately the NW¼SE¼ of Section 5, T. 40 S., R. 33 E. A water trough would be placed on each side of the Black Rock Drift fence at the NE¼SE¼ of Section 29, T. 39 S., R. 33 E., and troughs would be placed on each side of the Black Rock Drift fence and a dugout would be constructed at the end of the pipeline. Total length of the pipeline would be 2.5 miles, of which 2 miles would be within the Rincon WSA. This project would impact approximately 10 acres.

North Basque Hills Well: The North Basque Hills Well would be developed to provide reliable water for livestock and wildlife within the northern portion of the Basque Hills Pasture. This well is needed to implement an intensive rotation system within the pasture to provide for additional periodic critical growing season rest of herbaceous species.

This project would be located within the Basque Hills WSA at the SW¼SE¼ of Section 4, T. 38 S., R. 31 E., in the northern portion of the Basque Hills Pasture. This project would impact approximately 5 acres, including the trail.

Coyote Hole Well: The Coyote Hole Well would be developed to provide reliable water for livestock and wildlife within the North Desert Pasture. This well is needed to implement a rotation system to provide for additional periodic critical growing period rest of herbaceous species.

This project would be located outside any WSA at the NW¼SE¼ of Section 1, T. 39 S., R. 32 E., which is the site of the Coyote Hole Reservoir in the North Desert Pasture. This project would impact approximately 1-acre.

c. Vegetation Treatment

Oregon End Disc and Seed: The Oregon End disc and seed project would consist of disking and seeding 1,700 acres just south of Oregon End Ranch. The proposed disc and seed area is currently unproductive due to the sagebrush that is outcompeting the herbaceous understory for nutrients and available water. The invading brush would be removed through disking and then the area would be seeded to native grass species suited to this particular site.

The project area is located in Sections 11, 12, 13, 14, 23, and 24, T. 41 S., R. 33 E., in the southern end of the South Desert Pasture. Disking would be done using a rubber-tired or crawler tractor pulling a rangeland disc. Seeding would be done with a rangeland drill which would be pulled by a rubber-tired or crawler type tractor. A temporary fence would be constructed to protect the seeding from grazing for a minimum of two consecutive growing seasons and then be removed. Fencing materials would be delivered to the site by vehicle using the existing road. This project is outside any WSA.

2. Livestock grazing periods of use would change.

- a. In the Colony Seeding Pasture, grazing would begin March 1. The period of use would be March 1 - March 31.
- b. In the Basque Hills and Pueblo Ridge Pastures, grazing would begin April 1. The period of use would be April 1 - June 15.
- c. In the Black Rock Pasture, grazing would begin on April 1 for two consecutive years and then rested for two consecutive years. The period of use would be April 1 - June 15 for two consecutive years then it would be rested for two consecutive years.
- d. In the North Desert and South Desert Pastures (excluding the Oregon End Ranch use area), grazing would begin on June 16 for two consecutive years then on August 1 for two consecutive years. The period of use would be June 16 - July 31 for two consecutive years and then August 1 - September 15 for two consecutive years on a rotation basis.

- e. In the South Desert (Oregon End Ranch use area) Pasture, grazing would begin on June 16. The period of use would be June 16 - September 15.
 - f. In the Southeast Rincon Seeding Pasture, grazing would start on even years on April 1 and on odd years on May 1. The period of use would be April 1 - May 15 on even years and May 1 - June 15 on odd years.
 - g. In the Southwest Rincon Seeding Pasture, grazing would start on even years on May 16 and on odd years on April 1. The period of use would be May 16 - June 15 on even years and April 1 - April 30 on odd years.
 - h. In the Middle East Rincon Seeding Pasture, grazing would start on even years on April 1 and on odd years on September 5 or when the livestock were gathered from the North or South Desert Pastures, whichever came first. The period of use would be April 1 - April 10 on even years and September 5 - September 15 on odd years.
 - i. In the Middle West Rincon Seeding Pasture, grazing would start on even years on September 5 or when the livestock were gathered from the North or South Desert Pastures, whichever came first. On odd numbered years grazing would start on April 1. The period of use would be September 5 - September 15 on even years and April 1 - April 10 on odd years.
 - j. In the winter use pastures, grazing would begin on November 1. The period of use would be November 1 - February 28.
 - k. The Pueblo Valley, Pueblo Slough, and Tum Tum Pastures would be excluded from livestock use.
3. Livestock grazing systems would change.
- a. The season of use for the Colony Seeding Pasture would be changed from winter use to early spring use. The season of use would begin March 1 and end March 31, annually. A stocking rate will be determined following proposed vegetation treatment.
 - b. The Basque Hills Pasture would have a shortened season of use to provide for plant health. A rotation system centered around water would be implemented. Livestock herding and control of livestock waters would be used to control livestock grazing rotations within the pasture on or about May 15, annually, to ensure plant health requirements are met. Livestock would graze this area from April 1 to June 15 each year. The recommended stocking rate for the Basque Hills Pasture is 400 cattle.

- c. A new pasture would be created (Pueblo Ridge) from the east side of the Rincon-Oregon End Road to the Fields-Denio County Road. Construction of the Rincon-Oregon End and Oregon End fences would enable a spring only grazing system to be implemented where this early pasture would be used from April 1 to June 15. Utilization on woody riparian species would be limited to 30 percent or less, 4 out of 5 years. At no time would utilization exceed 50 percent on woody riparian species. Use in this pasture could be made up to June 30, if conditions are favorable and utilization levels are not exceeded. Following construction of the Black Rock Drift fence and the Southwest Rincon pipeline extension the Black Rock Pasture would be used April 1 to June 15 two consecutive years in conjunction with the west face of Pueblo Ridge, then rested for two consecutive years. Some livestock herding would be done to accomplish utilization objectives on riparian vegetation in Van Horn Basin and to keep livestock above the 5,000-foot elevation level after May 15. The recommended stocking rate for the Pueblo Ridge and Black Rock Pastures is 2,052 cattle.
- d. The Desert Pasture would be reduced to half of its original size then crossfenced again to form a North and South Desert Pastures. Construction of the Rincon-Oregon End, Oregon End, Black Rock, Catlow Gap fences and Desert Division fences would enable a deferred grazing system to be implemented where use would occur from June 16 to September 15. Within these timeframes, the North Desert Pasture would be used from June 16 to July 31 two consecutive years, then from August 1 to September 15 for two consecutive years. The South Desert Pasture (excluding the Oregon End Ranch use area) would be used from August 1 to September 15 for two consecutive years, then from June 16 to July 31 for two consecutive years. Some livestock herding may be necessary, if utilization on the limited bitterbrush stand in the North Desert Pasture is too high. The recommended stocking rate for these pastures is 2,505 cattle.
- e. The Oregon End Ranch use area would be within the South Desert Pasture. This area would be from the Oregon End fence to Long Draw. This area would be used annually from June 16 to September 15. The stocking rate is included in the 2,505 cattle recommended for the North Desert and South Desert Pastures described above.
- f. The Southeast Rincon Seeding and Southwest Rincon Seeding Pastures would be used together under a rotation system. The Southeast Rincon Seeding Pasture would be used from April 1 to May 15 one year, followed by use from May 1 to June 15 the next year. The Southwest Rincon Seeding Pasture would be used from May 16 one year, followed by use from April 1 to April 31 the next year. The recommended stocking rate for these pastures is 200 cattle.

- g. The Middle East Rincon Seeding and Middle West Rincon Seeding Pastures would be used as holding pastures during turnout and the end of grazing. The Middle East Rincon Seeding Pasture would be used from April 1 to April 10 one year, followed by use from September 5 to September 15 the next year. The Middle West Rincon Seeding Pasture would be used from September 5 to September 15 one year, followed by use from April 1 to April 10 the next year. The recommended stocking rate for these pastures is 805 cattle.
- h. Existing winter use pastures (Colony Winter, North Sandhills Seeding) would continue to be used for winter grazing, however, the season of use would be changed to November 1 to February 28 annually. The recommended combined stocking rate for these pastures is 300 cattle.
- i. Two areas (Starr Winter and North Colony Winter) would be changed to winter use. Construction of the Starr Winter fence and the North Colony Winter fence would enable a winter only grazing system to be implemented where use would be from November 1 to February 28 annually. The recommended stocking rate for the Starr Winter Pasture is 300 cattle and the North Colony Winter Pasture is 100 cattle.
- j. The Oregon End Winter Pasture would be reduced in size. That area below the Oregon End Ranch from the Oregon End fence west to Long Draw would become part of the South Desert Pasture (Oregon End Ranch use area). The remaining Oregon End Winter Pasture (Long Draw) would continue to be winter pasture. The season of use would be from November 1 to February 28 annually. The recommended stocking rate for the Oregon End Winter Pasture is 200 cattle.
- k. After fencing the Tum Tum Lake area, it would become excluded from livestock use. The Pueblo Valley and Pueblo Slough Pastures would remain excluded from livestock.

Pasture Rotation Alternative C

PASTURE	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Colony Seeding	03/01-03/31	03/01-03/31	03/01-03/31	03/01-03/31
Basque Hills	04/01-06/15	04/01-06/15	04/01-06/15	04/01-06/15
Pueblo Ridge	04/01-06/15	04/01-06/15	04/01-06/15	04/01-06/15
Black Rock ¹	04/01-06/15	04/01-06/15	REST	REST
North Desert ¹	06/16-07/31	06/16-07/31	08/01-09/15	08/01-09/15
South Desert ¹	08/01-09/15	04/01-06/15	06/16-07/31	06/16-07/31
SE Rincon Seeding	04/01-05/15	05/01-06/15	04/01-05/15	05/01-06/15
SW Rincon Seeding	05/16-06/15	04/01-04/30	05/16-06/15	04/01-04/30

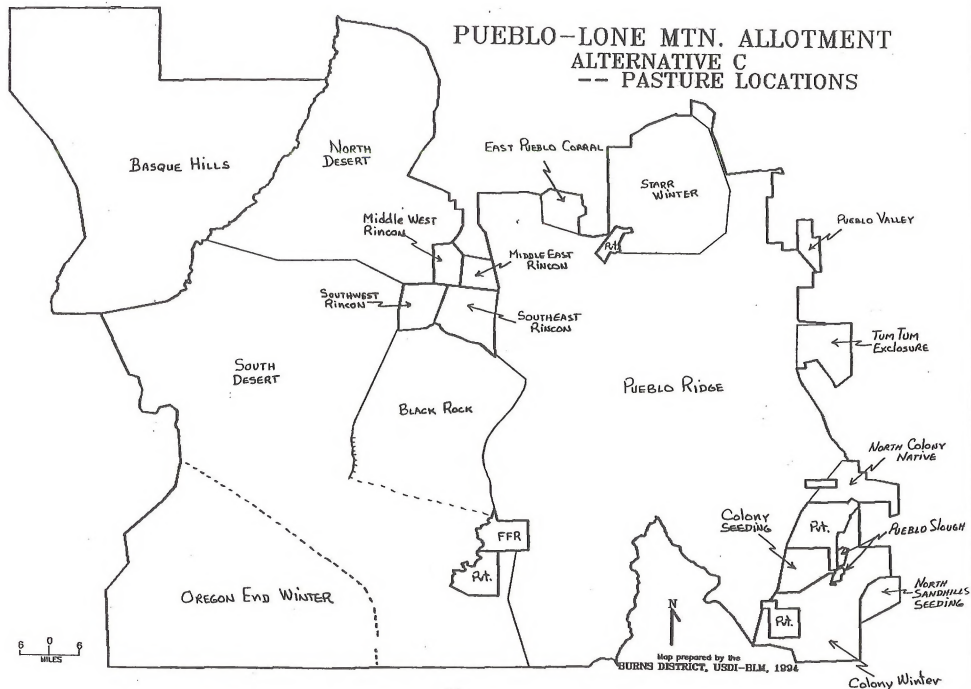
PASTURE	YEAR 1	YEAR 2	YEAR 3	YEAR 4
ME Rincon Seeding	04/01-04/10	09/05-09/15	04/01-04/10	09/05-09/15
MW Rincon Seeding	09/05-09/15	04/01-04/10	09/05-09/15	04/01-04/10
Colony Winter	11/01-02/28	11/01-02/28	11/01-02/28	11/01-02/28
N Sandhills Seeding	11/01-02/28	11/01-02/28	11/01-02/28	11/01-02/28
Starr Winter	11/01-02/28	11/01-02/28	11/01-02/28	11/01-02/28
North Colony Winter	11/01-02/28	11/01-02/28	11/01-02/28	11/01-02/28
Oregon End Winter	11/01-02/28	11/01-02/28	11/01-02/28	11/01-02/28
Tum Tum Lake Exclosure	EXCLUDED	EXCLUDED	EXCLUDED	EXCLUDED
Pueblo Valley	EXCLUDED	EXCLUDED	EXCLUDED	EXCLUDED
Pueblo Slough #1	EXCLUDED	EXCLUDED	EXCLUDED	EXCLUDED
Pueblo Slough #2	EXCLUDED	EXCLUDED	EXCLUDED	EXCLUDED

- ¹ - Change from the preferred alternative (Alternative B).

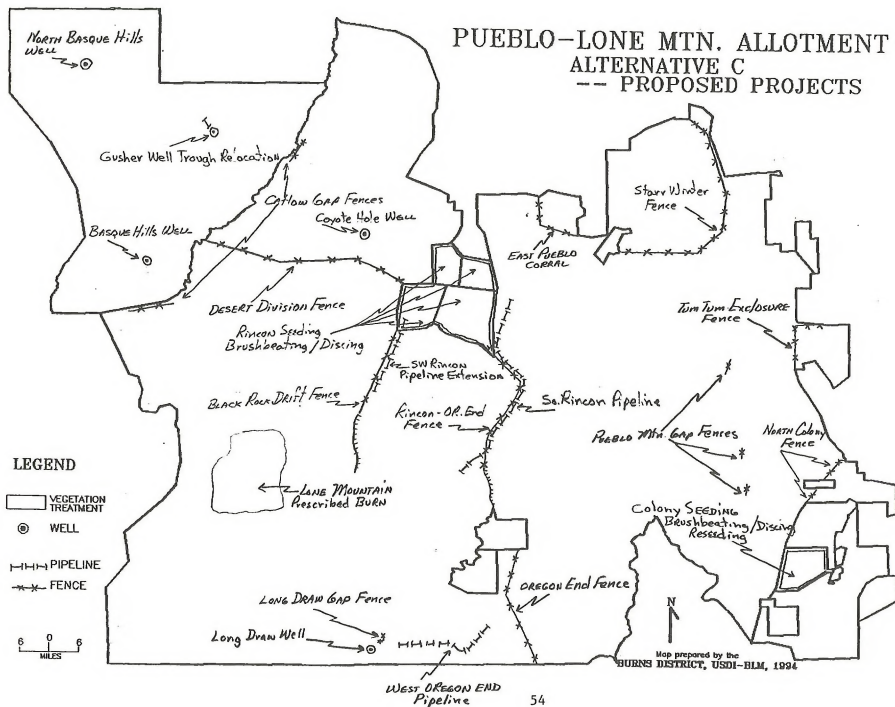
Note: Refer to Page 53 for these pasture locations.
Refer to Appendix 16 for grazing formula table.

4. Grazing levels and distribution would not change substantially. Timing of livestock grazing in specific areas would change.
5. Available livestock forage in the short term would be 15,448 AUMs.
6. Any future changes in grazing management (including allocation levels and grazing systems) would be based on monitoring data and formal allotment evaluations.

PUEBLO-LONE MTN. ALLOTMENT ALTERNATIVE C -- PASTURE LOCATIONS



PUEBLO-LONE MTN. ALLOTMENT ALTERNATIVE C -- PROPOSED PROJECTS



G. Other Alternatives Considered

In 1984, a more intense management strategy, with associated improvements, was developed for the allotment. Under this alternative, management of the vegetative resource was to be accomplished with the development of more rangeland improvements than either Alternative B or Alternative C in this document. Developments included 64 miles of management fence; three wells; 65 miles of pipelines with troughs; and 11,200 acres of vegetation manipulated to improve forage conditions for livestock and wildlife, of which 5,300 acres were proposed to be seeded to crested wheatgrass. Due to current WSA constraints, this proposal is not feasible.

The alternative of no livestock grazing within the Pueblo-Lone Mountain Allotment was dismissed because it is not in conformance with the 1983 Andrews Grazing Management Program Final EIS. Results of public scoping meetings held in Burns, Denio, and Portland in March 1982, were described as, "Public comment at the meetings overwhelmingly opposed the analysis in the EIS of a "No Grazing" alternative that would prohibit livestock grazing throughout the EIS area." (Andrews Land Use Plan Proposed Actions and Additional Alternatives to be Analyzed in the Andrews Grazing Management EIS, August 2, 1982, 39 p.)

IV. ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

A. Introduction

This section describes the environmental consequences that would result from implementation of the alternatives. These impacts are compared in relation to the resources described in the affected environment section. The impacts are analyzed by alternative.

The two major actions that cause impacts in relation to the alternatives are (1) implementation of grazing systems including changes in period of use and (2) construction of range improvement projects.

The following assumptions have been made as a basis for analysis:

- Vegetation is the primary resource that would be affected, and changes in vegetation affect other values.
- Grazing systems would be followed as described.
- Monitoring studies would be established and evaluated on a scheduled basis (Refer to Appendix 11 - Monitoring Plan).

The grazing seasons for Alternatives B and C have grazing periods designed to avoid use during the critical growing periods. The critical growing period is the time each species is expending energy to produce seed. This period of time is recognized as a susceptible time to graze plants. A list of herbaceous key forage plants and their critical growing period is contained in Appendix 17.

The grazing seasons used in the EA are defined for analysis purposes as follows:

Proposed Grazing Seasons:

<u>Treatment</u>	<u>Symbol</u>	<u>Period of use</u>
Early Spring	E	03/01 to 03/31
**Early spring grazing would occur before the critical growing period for the herbaceous plants. Alternatives B and C - Colony Seeding Pasture.		
Spring	Sp	04/01 to 05/15
Spring	Sp	04/01 to 04/30
**Spring grazing would occur before the critical growing period for the herbaceous plants. Alternatives B and C - Southeast and Southwest Rincon Seeding Pastures.		
Spring/Early Summer	Sp/ES	04/01 to 06/15
**Spring grazing would occur during a portion of the growing season of the key plant species. Alternative B - Pueblo Ridge and Basque Hills Pastures, Alternative C - Pueblo Ridge, Basque Hills, and Black Rock Pastures. Livestock would be above 6,000 feet elevation by May 15 in the Pueblo Ridge Pasture. Livestock would be rotated by May 15 in the Basque Hills Pasture. Use in the Black Rock Pasture would be rotated using a 2-year flip-flop system.		
Summer	Su	05/16 to 06/15
Summer	Su	05/01 to 06/15
**Summer grazing would occur during a portion of the critical growing season of the key plant species. Alternatives B and C - Southeast and Southwest Rincon Seeding Pastures.		
Summer/Fall	Su/Fa	06/16 to 09/15
Summer/Fall	Su/Fa	06/16 to 07/31
Summer/Fall	Su/Fa	08/01 to 09/15
**Summer/fall grazing would occur after seed ripe for most key plant species. Alternative B - Desert Pasture, Alternative C - North and South Desert Pastures using a rotation system.		
Winter	Wi	11/01 to 02/28
Winter	Wi	12/01 to 02/28
**Winter grazing would occur while the key plant species are dormant. Alternative A - Colony Winter, North Sandhills Seeding, Colony Seeding, and Oregon End Winter Pastures. Alternatives B and C - North Colony Winter, Colony Winter, North Sandhills Seeding, Starr Winter, and Oregon End Winter Pastures.		
Rest	Rest	None
**No use by livestock would occur under a rest treatment. Alternative C - Black Rock Pasture.		

**Grazing would occur throughout the critical growing season for key plant species. Alternative A - Desert and Rincon seeding pastures.

Excluded

EX

No Use Period

**No grazing would occur any time during the year. The area would be excluded from grazing. Alternative A - Pueblo Valley and Pueblo Slough Pastures. Alternatives B and C - Pueblo Valley, Pueblo Slough, and Tum Tum Pastures.

The following is a list of mandatory items which must be considered for analysis in the EA:

1. Sensitive, threatened or endangered plant and animal species
2. Floodplains and wetlands
3. Wilderness Values
4. Areas of Critical Environmental Concern
5. Visual Resource Management
6. Water Resources
7. Air Quality
8. Cultural or Historical Resource Values
9. Paleontological Resources
10. Prime or Unique Farmlands
11. Wild and Scenic Rivers
12. Native American Religious Concerns

Native American religious concerns have not been documented in the area. Significant paleontological resources, prime or unique farmlands, and wild and scenic rivers do not occur within the allotment, and will not be discussed further in the EA.

Geology and minerals would not be impacted and, therefore, will not be discussed.

Sixty acres of the wetlands found in Pueblo Valley (known as the Pueblo Sloughs) are currently fenced into several enclosures. Although described in the Affected Environment section, these wetlands are not included within pastures and have been omitted from the Environmental Impacts section.

Wilderness analyses of projects or actions taking place in WSAs were completed by an examination of how proposed projects or actions affect wilderness values. There are primary wilderness values (key and essential elements) which include roadlessness, naturalness, solitude, primitive and unconfined recreation, and size. A definition of these values are found in the glossary. In addition, there are supplemental wilderness values (may or may not be present but if present adds to the value of wilderness) which includes ecological, geological, scientific, educational, scenic, and historic. The primary wilderness values being affected in this plan include naturalness, solitude, and primitive and unconfined recreation. Supplemental values being affected include ecological and scenic. When evaluating effects of projects or actions on wilderness values we take into account the various attributes of the wilderness character. These attributes include air, aquatic system, rock/landforms, soils, vegetation, animals, ecosystems/landscapes, cultural resources, and wilderness experiences (Cole, 1994).

B. Alternative A (Historical Use)

This alternative involves no change from the historical grazing pattern. Grazing levels and season of use would not change. No new project work is proposed under this alternative.

1. Environmental Consequences of Alternative A (Historical Use)

Upland Vegetation

Most upland areas would continue to be grazed seasonlong under this alternative. The Basque Hills, Desert, and Rincon seeding pastures would be grazed April 16 - October 30 every year. Grazing plants during the critical growing period every year reduces carbohydrate reserves in the plant roots which can result in low vigor or death. This system would result in a decrease in percent composition of most key herbaceous upland plants, and an increase in the percent composition of less palatable species. At light grazing levels, there would be little or no change in species composition. However, heavy or moderate utilization would be expected on some portions of the pastures, regardless of stocking rates, due to the variable terrain, vegetation type, and location of water. Under this season of use, ecological condition would either decrease or remain static.

Mountain mahogany and bitterbrush stands present in the Desert Pasture would continue to receive heavy use late in the summer after perennial grass species dry and become less palatable. Continual late season use on these desirable woody species would result in low vigor and a lack of stand replacement.

The grazing season for the remaining pastures (Colony Winter, Colony Seeding, North Sandhills Seeding, and Oregon End Winter Pastures) would be winter use from December 1 - February 28. Under a winter grazing season, key herbaceous plants would increase in percent composition in all pastures except for the Colony Seeding Pasture even at heavy utilization levels. In the Colony Seeding Pasture, the potential for herbaceous plant improvement would remain limited by sagebrush and rabbitbrush, which dominate the pasture. Ecological condition would either increase or remain static in all winter use pastures.

The occasional trampling by livestock on the delicate, barren slopes of the foothills from Little Cottonwood Creek, north to Fields, would disturb the habitat of several State sensitive species including large-flowered chaenactis, broad-flowered chaenactis, ochre-flowered buckwheat, and naked-stemmed phacelia. Some of the plants may become uprooted or trampled by the action of cattle walking through the area. The low number of livestock and the brief time they spend on the site would not be significant enough to adversely affect any of the four species as a whole. Other sensitive plant species would not be affected.

Riparian Ecosystems

Under this alternative, the east side of the Desert Pasture is the only area that contains streamside riparian ecosystems.

Historically, the grazing system used in the Desert Pasture has been seasonlong from April 16 - October 30. Decreases in key woody and herbaceous species would continue in riparian areas accessible to livestock under this period of use. Heavy utilization of riparian vegetation would generally occur during mid- to late summer. Aspen, alder, and willow would receive heavy use and be unable to propagate. Stands would become old and decadent with single age class plants dominating the stand. Riparian areas would remain in or move toward poor condition under this alternative.

Upland Meadows

Nearly all of the upland meadow sites are located within the Desert Pasture. The ecological condition of the meadow vegetation would continue to decline under seasonlong grazing. This would be primarily caused by heavy utilization of these areas during the critical growing period with no opportunity for regrowth. Headcutting, generally attributed to heavy livestock use, is prevalent in many meadows and would continue to expand under this alternative. Alien and noxious weed species would be able to more easily colonize a meadow system weakened by continuous grazing during the growing season. Iris and big sagebrush would continue to cover more meadow area as headcuts grow and the water table drops.

Wildlife and Fisheries

Forage competition between cattle and sage grouse, pronghorn antelope and other species using meadows would continue to be strong once upland vegetation started to dry. Little residual cover would remain on meadows and species diversity would be reduced due to heavy livestock use throughout the growing season. This use would favor an increase in species unpalatable to most wildlife species.

Sage grouse would be negatively impacted by continued heavy livestock use of meadows. The lowering of the water table, due to gullyng of wet meadows caused by heavy livestock use, would reduce available habitat. Heavy livestock use of forbs associated with wet meadows would reduce the amount of available rearing habitat used by sage grouse. As meadow habitat decreased, there would be an increase in utilization on adjacent uplands. This increase in utilization would cause a reduction in herbaceous nesting cover on the adjacent uplands.

Strong forage competition between cattle and summering deer, in parts of the Pueblo Mountains and upper Box Canyon areas, would continue to occur where topography is gentle. Bitterbrush, curlleaf mountain mahogany, aspen, and alder are plants used by both species. Vigor of these key browse species would continue to be low with little reproduction where they are heavily browsed. Forage competition would cause deer to enter the winter with low to moderate fat reserves - fat needed to withstand severe winters. Cattle would adversely impact summer deer habitat.

Forage competition between cattle and deer on deer winter range would not be strong. Antelope and cattle do not have similar food habits during winter periods; therefore, forage competition would not be significant between them.

Due to different topography used by bighorn sheep and cattle, no significant forage competition would occur on bighorn summer range. Some competition for forage would occur when cattle use is heavy on bighorn winter ranges.

A slight decrease in nongame species diversity would occur on upland sites where heavy cattle use is expanded to additional areas. Game species such as mourning dove, chukar and quail would not be affected by grazing under this alternative.

Without treatment, sagebrush and rabbitbrush would continue to increase in the Rincon seedings and Colony Seeding Pastures. The increase would provide cover for many small mammals and songbirds. As woody species increase in density and provide additional cover, there would be more nest sites and forage available to many species of wildlife. As cover in seeding areas increases, some wildlife species that prefer open habitat would be reduced in numbers. If a dense stand of Wyoming big sagebrush was present, antelope would no longer make use of the Rincon seedings.

Of the Special Status wildlife species found in the allotment (refer to Appendix 12), there would be impacts on the following under this alternative. Yellow-billed cuckoo and bobolink, both species are dependent on riparian areas, would be negatively affected by continued heavy use of riparian areas. Lewis woodpecker and western bluebirds, both cavity nesters that use aspen, could be adversely impacted by continued heavy use of aspen reproduction.

Other Special Status, candidate, and listed wildlife species would not be impacted.

Unless mitigated, adverse effects could occur to the fisheries in Van Horn Basin in the Desert Pasture. Because the season of use extends through the summer, cattle would be expected to congregate near the stream, with detrimental effects to the streamside riparian vegetation. As streambanks slough and erode due to the lack of adequate vegetation, the fish habitat would degrade.

Excessive sedimentation from the bank erosion would limit the availability of suitable spawning gravels and affect the macroinvertebrate community. With the summer use, the decline in woody vegetation would decrease shade over the stream, resulting in temperature increases and less overhanging canopy cover. Without adequate woody vegetation or bank stability, the streams would widen and become more shallow, resulting in warmer temperatures and loss of pool habitats. The upper reaches would probably not be able to support fish species, and the lower reaches, where the fish currently are, would become degraded. The effect would be loss of habitat for the Lahontan cutthroat trout, Alvord chub, and brown trout.

Wetlands

Sixty acres of wetlands in the Pueblo Slough Pastures #1 and #2 are excluded from livestock use. These pastures are managed for their wetland characteristics which are improving under exclusion.

There would continue to be approximately 100 acres of wetlands in the Pueblo Slough area that would be grazed by livestock. These areas are alkaline playas and portions of the drainage with a low cover form due to limited site potential. They would be grazed during the winter from December 1 - February 28, annually, as they have been in the past.

Migrant aquatic birds usually arrive in March and April, or later, and begin nesting. Winter livestock use in the Pueblo Valley is not believed to affect nesting success because winter cattle use is not usually heavy on these wetlands and waterfowl do not nest on playas with sparse cover. Some shorebirds, such as snowy plover, prefer a low cover form for foraging and nesting. Cattle grazing would not impact these shorebirds.

Waterfowl nesting cover near the small waterholes in the Desert Pasture would receive heavy use by cattle. Cover for waterfowl broods is very limited at these impoundments due to limited site potential and heavy utilization by livestock. Very few, if any, waterfowl broods are expected to fledge at these sites.

Water Quality

Water quality would continue to fail to meet water quality standards. With the potential degradation of the riparian habitat in the Desert Pasture with the summer use, streambank erosion and sedimentation would continue to be nonpoint source pollution problems. The amount of overhanging woody riparian vegetation would be expected to decrease, resulting in less shade over the stream. With bank degradation and loss of woody vegetation, the streams would widen and become more shallow in reaches that are not rock-armored. The lack of shade and channel widening could result in possible increases in water temperatures and continued lowering of DO concentrations to levels that are detrimental to aquatic organisms, including the fish in Van Horn Creek.

Soils

Soils would continue to be compacted by livestock through seasonlong grazing practices. Those areas receiving the most soil compaction would be near watering sites and areas that are grazed when soils are wet, such as meadows and along streams. Soil movement would continue due to the lack of vegetative cover on uplands, as well as meadow and streamside areas.

Cultural Resources

Cattle would continue to congregate in better-watered spring/riparian/meadowland localities which usually coincide with the most significant cultural resources. Valuable information could be lost because artifact associations would be displaced vertically and horizontally by livestock trampling. Heavy grazing pressure would cause or accelerate surface soil erosion, which displaces cultural materials and can alter surface indicators of the presence of significant subsurface sites.

In upland areas lacking water, less significant sites are usually present and would not be as vulnerable to intensive grazing pressure and cattle trampling.

RNAs/ACECs

The historical grazing system in the Long Draw RNA allows some winter and summer use on the herbaceous forage species. Summer utilization varies from very light to heavy use depending on the availability of water at various ephemeral springs. Two or more consecutive years of heavy use would lower the vigor and weaken the reproductive potential of the ricegrass and needlegrass existing in the RNA/ACEC.

Winter grazing allows for utilization of dormant forage so no adverse impacts are expected under this type of use.

Livestock grazing under this alternative in the Pueblo Foothills RNA/ACEC is limited to moderate utilization on herbaceous species and light utilization on woody riparian species during the spring and fall months. Livestock use the riparian corridor to move to and from the summer grazing area and they rarely stay within the RNA/ACEC more than 2 or 3 weeks. No adverse impacts to the key vegetation are expected on normal years.

The delicate, south-facing slopes in Little Cottonwood Creek Canyon, which contain several sensitive plants, are occasionally damaged by foraging livestock when the ground is moist or very wet. Livestock do not utilize the plants as forage but they disturb the ground by making deep tracks and thus altering the habitat.

In the Tum Tum Lake RNA/ACEC, the grazing use under this alternative is limited to early spring and late summer when livestock are first turned out and when they return from the mountain. Grazing use is not heavy during these periods except occasionally near the watering areas, so there would be no long-lasting adverse impacts over most of the area.

Visual Quality and Recreation

Livestock would continue to consume most of the meadow and riparian vegetation by the summer months. Camping experiences would be lessened by the presence of livestock. Hunting and wildlife viewing opportunities within the allotment would be lessened by the overuse of wildlife habitat along streams and on meadows.

The overall scenic quality would continue to decline as vegetative communities are heavily grazed throughout the critical growing period.

Air Quality

Air quality would remain as it is now. There would be no additional impacts under this alternative.

Wilderness Study Areas

Ecological values within the WSAs would continue to be degraded due to adverse impacts on wildlife, fisheries, vegetation, soils, and water quality. This degradation would influence the quality of naturalness.

Having livestock in the WSAs for extended periods of time when weather is good detracts from the wilderness experience as a whole. People visiting the WSAs experience the effects of livestock grazing activities throughout the allotment at any time through the year. Photographic opportunities, primitive camping opportunities, and hiking experiences are lessened by the presence of livestock. This would have adverse impacts to primitive and unconfined recreation, a primary wilderness value.

2. Environmental Consequences of Proposed Projects for Alternative A (Historical Use)

No new projects are proposed under this alternative.

3. Summary

This alternative would not meet any of the objectives established for the allotment. Upland condition would continue to decline on most of the allotment due to continual grazing of the herbaceous vegetation throughout the entire critical growing period, annually. Riparian conditions would also continue to decline due to both herbaceous and woody vegetation being heavily grazed during their critical growing periods. Meadow conditions would continue to decline due to heavy livestock use and resultant expansion of headcutting and gullies as well as invasion of sagebrush and undesirable species.

Water quality would remain unacceptable as there would be little residual vegetation along water courses to filter sediments. Wildlife and fisheries habitat would degrade.

Cultural resources would be at risk as surface sites would be scattered and moved laterally. Air quality would not be affected. Over time, recreational experiences would be reduced in quality. Visual appearance of the landscape would be affected by annual removal of vegetation which would result in the lack of stand replacement of woody vegetation and poor vigor of herbaceous vegetation.

Because of their locations, the RNA/ACECs should experience little to no negative impacts under this alternative. Ecological values associated with WSAs would be negatively impacted through continued seasonlong use by livestock in the allotment. However, there would be no new impacts from project development within the WSAs.

C. Alternative B (Preferred Alternative)

This alternative involves changing grazing use patterns and seasons of use by creating three more pastures and one additional exclosure area within the allotment.

1. Environmental Consequences of Alternative B (Preferred Alternative) Grazing System

Upland Vegetation

All upland areas are expected to improve and meet the prescribed objectives.

The Colony Seeding Pasture would be grazed in the early spring from March 1 - March 31, annually. This period of use is outside the critical growing period and allows full regrowth and seed production every year. Brushbeating or discing and reseeding this area, as proposed, would dramatically increase productivity of livestock forage and enhance the soil-holding capabilities of the site. Brushbeating or discing would remove the brush component from most the pasture. Reseeding this previously seeded pasture would create a grassland area which would provide additional relief to native range pastures within the allotment.

The spring use rotation proposed for the Rincon seeding pastures would permit improvement in plant vigor and an increase in composition of perennial herbaceous species. This system would allow adequate root storage and an increase in key species would be anticipated. Following the grazing period prescribed would allow plants to complete their annual cycle through seed ripe every other year. Brush beating or discing the seedlings would increase herbaceous productivity and provide an area to use for native range deferment.

The spring/early summer season would be used on the Basque Hills and Pueblo Ridge Pastures and would permit improvement in plant vigor and an increase in percent composition of desirable woody and key herbaceous species under both light and moderate utilization levels. In the Pueblo Ridge Pasture, because livestock would be herded above the 5,000-foot elevation level by May 15, no detrimental effects to lower elevation upland vegetation would occur.

Livestock would move to higher elevations as the season progressed eventually reaching the higher elevations in June. At higher elevations, plant phenology is delayed due to lower temperatures. In the Basque Hills Pasture, herbaceous species would be rested during the critical growing period every other year which would provide for plant vigor and root storage. Livestock would be herded after May 15 to allow for critical growing period rest on herbaceous species every other year. This strategy would allow for storage of carbohydrates into root systems and an increase in vigor.

Mountain mahogany and bitterbrush stands in the Pueblo Ridge Pasture would receive little to no cattle use under a spring/early summer system. These species of plants should increase in vigor and have the ability to produce seed annually, resulting in some stand replacement which would create an uneven age class stand. Upland aspen sites would move toward an uneven age class stand as new suckers would be allowed to grow. These stands should become denser and healthier over time.

The summer/fall period of use proposed in the Desert Pasture would allow key forage plants to nearly complete their critical growth period every year prior to livestock use. Under this system of deferment, herbaceous plants would store enough nutrients in their root systems to counteract any detrimental effects of grazing. Moderate use levels would allow for an increase in key species which is anticipated. Plant diversity in the Desert Pasture is not expected to change, but it would become more apparent under this alternative. Individual species normally subdued by seasonlong grazing would be more vigorous, and thus, more visible. Forbs which are normally dormant or have completed their life cycle by July 1 would benefit from the late season of use.

The limited bitterbrush stands that are present at the north end of the Desert Pasture would experience some utilization as the herbaceous plants dry and become less palatable. This utilization would be counteracted somewhat by herding that would be initiated when utilization on bitterbrush begins to occur. Some browsing would result in a minor decrease in seed production and plant vigor.

The proposed prescribed burn on Lone Mountain would reintroduce fire into a plant community which has had fire removed for an extended period of time. This reintroduction would create a mosaic of plant successional stages across the burn area. The fire would consume nearly all aboveground vegetation within the burned areas. In the short term, burn areas would revert to a grass dominated community. Over the long term, sagebrush would increase in density and the area would eventually revert back to pre-burn status. Burning would also improve nutrient cycling within the ecosystem.

The winter season of use in the Colony Winter, North Colony Winter, North Sandhills Seeding, Starr Winter, and the Oregon End Winter Pastures would have no detrimental effects on the herbaceous plants as they would be grazed entirely outside of the growing season after the key species have reached dormancy. An increase in vigor and percent composition would be expected under even heavy utilization levels.

The Pueblo Valley and Pueblo Slough Enclosures, which have had no livestock grazing for several years, would not be affected under this alternative. The Tum Tum Lake Enclosure would benefit from being removed from grazing by increased vigor and density of key forage plants near water sources.

Riparian Ecosystems

The Pueblo Ridge Pasture is the only pasture containing streamside riparian ecosystems. Riparian areas would be grazed during the spring/early summer from April 1 - June 15, annually. The early season of use would lessen livestock pressure on riparian areas. Spring temperatures are cool and livestock distribute better off of riparian areas. Bank shearing occurs during periods when soils are wet; therefore, due to the reduced concentration of livestock in cool weather, it is expected that overall bank shearing would decrease. Riparian vegetation would increase in density, composition, and vigor under this alternative even with the expected moderate use. While woody vegetation would experience some light utilization during this period, it is expected that there would be an increase in density and vigor of these species.

Livestock would be removed from the riparian areas prior to summer temperatures when livestock seek out shade and lush forage along riparian areas. Utilization is expected to be moderate on the herbaceous species and regrowth would occur following the grazing period prescribed.

The riparian plant community would become more diverse as woody species become established and streambank cover increases. Riparian areas would become wider over time, creating more subsurface water storage and increasing summer flows.

It is expected that of the 47.79 miles of streamside riparian habitat in poor or fair condition on public lands, 33.45 miles or 70 percent, would improve to good or excellent condition within 15 years of implementation of this alternative (Appendix 13). The remaining 14.34 miles, or 30 percent, in poor or fair condition would respond slower due to site potential limitations and would not be in good or better condition within 15 years. The 18.63 miles of riparian habitat on public lands, in good or excellent condition, would remain in their present condition or improve.

Riparian habitat would improve to good or excellent condition because residual cover would remain after cattle are removed. These areas would become much more stable because they would be allowed to regrow prior to winter storms and spring runoff events. Streambanks would revegetate, allowing them to build as sediments are filtered out and deposited.

Upland Meadows

Nearly all of the upland meadow sites are within the Pueblo Ridge Pasture under spring/early summer use. Meadows would experience moderate use under this system. Existing headcuts may or may not become stabilized, depending on the site potential and the damage already done. Regrowth is expected on most meadows following the removal of livestock. As headcutting and erosion are stabilized, this system should permit adequate improvement in meadow condition to meet allotment objectives.

One unfenced spring and associated meadow (Winnemucca Spring) is located in Long Draw within the Oregon End Winter Pasture and is unfenced from the Desert Pasture. Some incidental use would occur during the summer/fall grazing season in addition to scheduled use during the winter grazing season. The proposed season of use in the Desert Pasture begins after seed ripe for herbaceous plants which would minimize any detrimental effects to the meadow area. Meadow condition should slowly improve with this deferment.

Wildlife and Fisheries

Forage competition would be reduced between cattle and sage grouse, pronghorn antelope, and other species using meadows. Meadow areas would regrow after livestock are removed, making them less susceptible to erosion and invasion of undesirable plant species. Regrowth on meadows would improve the habitat used by nongame species such as various species of mice and voles.

Changes in cattle use would cause little change in bighorn sheep summer range. Bighorns and cattle usually graze different areas with most of the bighorn use occurring in rough, rocky topography. Actions proposed under this alternative would reduce forage competition on bighorn winter range where, under the present grazing system, cattle use these areas during the summer before winter bighorn use occurs.

Sage grouse would also benefit from additional residual upland cover which would make it more difficult for predators to locate their nests.

An improvement in riparian habitat would allow for an increase in wildlife abundance and diversity. As the riparian shrub and tree canopy increases, it would provide the structure and cover used by many species of songbirds and small mammals. Increases in prey species may favor additional predators. An increase in canopy cover of woody riparian species would increase stream shading, reducing temperatures and providing cover, feed and nesting sites for some songbirds.

Browsing animals, such as mule deer, would benefit from the improved vigor of browse species like bitterbrush and curlleaf mountain mahogany.

Negative impacts to wildlife from the placement of fences would be minimal. In an effort to minimize the impacts, construction of fences would be to Bureau standards for the wildlife species that would be affected. Additional water development would benefit wildlife as well, especially in the proposed Desert Pasture.

The Lone Mountain prescribed burn would have variable impacts on wildlife, depending on the individual species. Summering deer densities are low in this area and unburned cover would be left to sustain adequate population levels of deer. Some benefit to deer may occur due to increased forb production following the burn. Bighorn sheep could also benefit from the burn where fire runs along rims on the south side of Lone Mountain. For the first 2 years following burning, grasses and forbs would be more succulent and higher in nitrogen than in unburned areas. This succulent growth would provide improved forage for bighorn sheep during the spring. Antelope would be strongly favored by the burn, because they readily use low cover and the forbs that grow following fire. Antelope use on Lone Mountain would occur during the spring and summer. Presently very little antelope use occurs in the Lone Mountain area.

Low densities of sage grouse are found in the area of the proposed burn. A slight increase in sage grouse may occur due to the prescribed fire with its resulting increase in forbs. The small number of springs and meadows and other succulent forage areas on Lone Mountain probably limits grouse numbers more than the availability of upland forbs. With the mosaic of burned and unburned cover, adequate nesting and thermal cover would remain for sage grouse.

The proposed burn would provide favorable habitat for nongame species. Some sagebrush obligate (dependent) species, such as sage thrasher, sage sparrow, and Brewer's sparrow, could be displaced to adjacent unburned sites for nesting.

There would be no effect on bald eagle and American peregrine falcon by the proposed burn. Impacts to western burrowing owl, northern sagebrush lizard, and ferruginous hawk would be minimal. Possibly an increase in herbaceous ground cover could allow an increase in small mammals providing an improved food source for raptors.

A temporary fence would be used to protect the burn area for two growing seasons. This fence would be an insignificant obstacle for larger wildlife species found in the area because they would learn to negotiate it in a short time. This fence would be removed following the second growing season after the burn and would be a short-term impact.

Sagebrush control in the Rincon seeding pastures would have long-term benefits to summering antelope found there. Without brush control, sagebrush would increase in size and density over time. Dense sagebrush cover over large areas is usually poor antelope habitat. Maintenance of a low cover form would favor use by antelope.

Removal of sagebrush and rabbitbrush encroaching into seedings would reduce cover used by some nongame species, such as black-tailed jackrabbits and reptiles, and would improve it for species using open habitat, such as horned lark. Complete conversions from dense sagebrush to crested wheatgrass reduces species diversity (Maser, et al. 1984). However, the existing seedings with brush encroachment have a much sparser brush cover than untreated brush areas and the reduction in species diversity would be less.

The aquatic habitat of the portion of the present Desert Pasture that would become the Pueblo Ridge Pasture, including Van Horn Basin, is expected to improve under the preferred alternative. With the removal of livestock before summer temperatures cause livestock to concentrate near the streams, riparian condition would improve. Streambanks would become more vegetated and stable in areas that are not currently rock-armored, and woody vegetation would increase in density and vigor. The increase in woody vegetation would provide increased shade and reduced water temperature gain. Stabilization of the banks would reduce the amount of bank erosion, resulting in less sedimentation of the streambottom and possible narrowing and deepening of stream channels in the reaches that are not rock-armored. Improvement in the riparian condition could also result in surface flows that extend into summer in some of the reaches of the streams that currently go dry.

In Van Horn Creek, the improvements in the riparian condition and aquatic habitat would result in improved and possible increased habitat for the Lahontan cutthroat trout and Alvord chub. Increased flow and reductions in fine sediments of the present riffle-run habitat of the upper reaches (Reaches 4-6) could make these reaches possibly suitable for Lahontan cutthroat trout. Reduced temperature gain in the stream would make the temperature of Van Horn Creek closer to the average rather than the upper limit of Lahontan cutthroat trout tolerances. It would possibly also result in increased DO levels during the June incubation period and improved reproductive success of the species. Alvord chub would probably still be limited to the lower reach because of gradient; however, increased summer flow, reduced sedimentation, and reduced water temperatures would improve the existing habitat for Alvord chub. Habitat would also improve for brown trout, which could have a detrimental effect on the other two fish species.

No negative impacts to fisheries are expected from any disturbances caused by the implementation or construction of projects.

Wetlands

The proposed management of the wetlands in the Pueblo Slough drainage is nearly the same as under Alternative A. The only difference is that a small portion of the Pueblo Slough within the proposed Tum Tum Lake Exclosure would be excluded from livestock. At small impoundments, waterfowl production would continue to be very little, if any, due to the impoundments' small size which makes survival of waterfowl broods unlikely. Upland nesting cover, near these small impoundments, would continue to be heavily grazed.

Water Quality

Under the preferred alternative, water quality in the Pueblo Ridge Pasture would progress toward meeting water quality standards. Riparian conditions would improve, because banks would be more stable and woody riparian vegetation would increase in vigor and density. As a result, nonpoint source pollution problems of erosion, sedimentation, and turbidity should be reduced; DO concentrations should increase as shade helps prevent temperature increases; and summer flows should increase as the floodplain areas improve in their water storage capability.

The first year following the Lone Mountain prescribed burn, there may be a slight increase in soil movement in burned areas as compared to unburned areas. By the second year following burning, vegetation should provide adequate ground cover and soil movement should be near preburn levels. There are no streams near the project area that would be affected.

Sediment yields from the Rincon seedings and the Colony Seeding project sites are not expected to accelerate significantly due to the proposed actions. Site characteristics indicate little soil movement offsite is expected and no streams near the project area would be affected.

No degradation of water quality is expected from any disturbances caused by the implementation or construction of projects.

Soils

Soils on the east side of the allotment would experience some compaction and hoof punching from spring livestock use while soils are damp or wet. The shorter grazing season should allow for some improvement of soil structure over time. Soil stability would also improve as vegetative cover and litter accumulation increases.

Isolated areas at proposed project locations may experience some soil disturbance/compaction if projects are installed when soils are wet. To reduce any negative impacts to soils, projects would be installed when soils are dry or frozen and surface disturbance would be kept to a minimum. Areas identified as moderate or severe erodibility would be avoided when possible.

Within the Rincon seedings and Colony Seeding Pasture the top 6 inches of the soil profile would be modified if disking occurred. This action would make the soil more susceptible to wind erosion in the short term. Because the soil surface would be rough following disking, airborne soil would be displaced only a short distance.

Some short-term soil movement would occur at the Lone Mountain prescribed burn site after vegetation is removed by burning. After the burn, there would be areas where no vegetation to hold soil in place until the area becomes revegetated. As the areas become revegetated soil movement would stop.

Cultural Resources

Cultural resource values are not anticipated to be impacted by construction elements of this alternative. This is due to proposed projects being few in number; generally nonimpactive to cultural sites; and, in most cases, planned for previously disturbed areas. Project redesign would mitigate impacts to cultural sites, following site-specific field surveys to be accomplished prior to final project layout.

In general, cattle trampling and erosional displacement of artifacts would lessen somewhat under implementation of this alternative, an improvement to the present situation.

RNAs/ACECs

The key elements for the Pueblo Foothills, Tum Tum Lake, and Long Draw RNAs/ACECs would be maintained or enhanced by implementing this action.

The Long Draw RNA/ACEC would have some incidental grazing use occur during the late summer with most of the use occurring during the winter dormancy periods. The Indian ricegrass and needleandthread grass (key elements for this RNA) would respond well under this grazing scenario. They should regenerate well as their seeds are incorporated into the sandy soil annually. The addition of the Long Draw Well would bring water into Long Draw and thus increase the chance of heavier use during the winter grazing period. Since the vegetation is dormant and the site is about 4 miles from the proposed well, any increase in use would not be significant enough to adversely affect the key species.

The Pueblo Foothills RNA/ACEC would be grazed only in the spring as the livestock are working their way to the high country through the riparian area along Little Cottonwood Creek. With sufficient soil moisture in the upland areas, the grazed forage would regrow. No significant impacts to the key elements within the RNA/ACEC are expected under normal conditions.

The key elements found within the Tum Tum Lake RNA/ACEC would not change significantly with the removal of livestock grazing. Herbaceous plants near watering areas would improve in vigor and density over time. Approximately 3 miles of fence would be constructed along the RNA/ACECs' north and west boundaries. There would be no known negative impacts to the RNA/ACEC from the construction of this fence.

No negative impacts to RNAs/ACECs are expected from any disturbances caused by the implementation or construction of projects.

Visual Quality and Recreation

The quality of the recreation experience throughout the Pueblo-Lone Mountain Allotment would improve as vegetative diversity increases. Wildlife viewing opportunities should be enhanced due to improved habitat within the riparian and upland areas. Hiking, backpacking, and general camping would also be enhanced through improved livestock grazing practices. The overall scenic quality of the landscape would be conducive to a much better experience with each passing year.

There would be some short-term visual impacts associated with the Lone Mountain prescribed burn. Removal of vegetation from the area, and the short-term black area created by the burn, would detract from the visual quality. Impacts would be short term and last only as long as the area was void of vegetation. In the long term, visual quality would increase with increased diversity across the viewshed.

Air Quality

Air quality would be affected for short periods of time during actual construction of projects under this alternative. Small amounts of dust are expected to become airborne during construction when vehicles or equipment are used. However, the amount of dust would be expected to be negligible.

During the proposed prescribed burn near Lone Mountain, large amounts of particulate matter would be released into the air in the form of smoke and ash while the actual burn phase of the project is completed. The duration of the project is expected to be less than a week and any smoke is expected to disperse rapidly and follow the prevailing winds.

Wilderness Study Areas

Wilderness values being affected in this alternative include both primary and supplemental values. Primary wilderness values being impacted are naturalness, primitive and unconfined recreation, and to a lesser degree solitude. Supplemental values being impacted include ecological and scenic.

Most of the developments/improvements under this alternative are either outside any WSA or in WSAs but classified as temporary and would be immediately removed if the area(s) were designated as wilderness. A few new developments would be permanent.

Following are a series of tables which summarize the analysis of impacts to wilderness values within each WSA affected by this alternative. These Impacts to Wilderness Values Tables show the effects of projects being proposed within WSAs or immediately adjacent to their boundaries. A detailed project by project written description of impacts to wilderness value(s) for each affected WSA can be found in Appendix 18.

Each specific project being proposed in this alternative within or immediately adjacent to WSAs is addressed. The context within which the terms "direct", "indirect", "long-term", and "short-term" are defined regarding the wilderness resource is stated as follows:

Direct - An action that would have an immediate impact on the landscape.

Indirect - The result of an action that would have an impact on the landscape over time.

Long-Term - A project or action that is deemed as permanent or would create surface disturbance.

Short-Term - A project or action that is temporary (has an established termination timeframe) and would not create surface disturbance beyond normal, routine, and authorized use.

TABLE 7

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE B

Pueblo Mountains WSA (2-81) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Oregon End Fence	N/A	N/A	S	N/A	N/A	1-mile adjacent to WSA following powerlines
Rincon-Oregon End Fence	D,N,L	D,N,L	D,N,S	P	D,L,N	25-mile in WSA, 2.75 miles adjacent to WSA
Pueblo Mountains Gap Fences (3)	N,D,L and P,I,L	N,D,L and P,I,L	N/A	P,D,I	N,D,L and P,I,L	3 gap fences for a total of .625-mile in WSA
South Rincon Pipeline	N/A	N/A	D,N,S	N/A	D,N,S	.25-mile in WSA. Remaining adjacent to WSA

Description of Abbreviation

D = Direct L = Long-Term P = Positive

I = Indirect S = Short-Term N = Negative

N/A = Not Applicable to this alternative or no impact to the wilderness value identified

TABLE 8

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE B
 Rincon WSA (2-82) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Rincon-Oregon End Fence	D,N,L and I,P,L	D,N,L	D,N,S	P,I and N,I	D,L,N	.25-mile in WSA, 2.75 miles adjacent to WSA
Catlow Gap Fences (2)	D,N,L and I,P,L	D,N,L	D,N,S	P,I	D,L,N	2 fences for a total of 1-mile in WSA
Long Draw Gap Fence	D,N,L and I,P,L	D,N,L	D,N,S	P,I	D,L,N	150' fence inside WSA, remaining adjacent to WSA
South Rincon Pipeline	D,N,S	N/A	D,N,S	P,D,I,S	D,N,S	.25-mile in WSA. Remaining adjacent to WSA
Long Draw Well	D,N,L	N/A	D,N,S	D,N	D,N,L	Immediately adjacent to WSA
Basque Hills Well	N/A	N/A	D,N,S	D,N,L and I,P	N/A	Close proximity to WSA
West Oregon End Pipeline	D,P,L	N/A	D,N,S	N/A	P,D,L	Remove trough in WSA, 2 miles of pipe adjacent to WSA

Description of Abbreviation

D = Direct L = Long-Term P = Positive

I = Indirect S = Short-Term N = Negative

N/A = Not Applicable to this alternative or no impact to the wilderness value identified

TABLE 9

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE B

Basque Hills WSA (2-84) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Basque Hills Well	N/A	N/A	D,N,S	I,N	N/A	Close proximity to WSA
Gusher Well Trough Relocation	D,P,L	N/A	D,N,S	D,I,P	D,P	Remove water development/restoration in WSA

TABLE 10

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE B

Hawk Mountain WSA (1-146A) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Long Draw Well	D,N,L	N/A	D,N,S	D,N	D,N,L	Immediately adjacent to WSA

Description of Abbreviation

D = Direct L = Long-Term P = Positive
 I = Indirect S = Short-Term N = Negative

N/A = Not Applicable to this alternative or no impact to the wilderness value identified

Other projects included in this alternative, but not addressed in the Impacts to Wilderness Values Tables because they do not represent developments and require an analysis are as follows:

Lone Mountain Prescribed Burn: By following a historical fire regime, ecological values associated with the Rincon WSA would be improved upon and would result in naturalness being indirectly enhanced over the long term. There would be short-term impacts to Scenic values as a result of the charred or burned vegetation. Subsequently, this would have an impact on primitive and unconfined recreation for wilderness visitors prior to the first growing season after the burn. After the vegetation has reestablished itself, all values would show improvement.

Livestock Grazing Periods of Use: The overall change in livestock management from the current situation to the one outlined in this alternative would be positive regarding all wilderness values. Ecological values would be directly enhanced through improved vegetation communities in all WSAs. This would indirectly have a positive influence to naturalness, primitive and unconfined recreation, and scenic values.

Following is a generalized description of developments that affect wilderness values of WSAs.

Fencing: Fencing projects in WSAs represent an addition of new human created structure(s) and would have an impact on the wilderness value of naturalness. Naturalness is changed or altered each time new developments are placed in a WSA, which modifies or trammels the primeval character of the landscape. Fences also have an impact on primitive and unconfined recreation, another primary wilderness value. Fences impact primitive and unconfined recreation due to the restrictive and inconvenient nature of fences to the wilderness visitor. Solitude, another primary wilderness value, is impacted for a short time during the construction of the project. Scenic, a supplemental wilderness value, is impacted by fences, which create visual intrusions in an undeveloped or relatively undeveloped landscape. Fences often have positive effects on ecological conditions, a supplemental wilderness value, by better controlling livestock movement and timing. This would generally improve vegetative communities along with soil properties.

Pipelines and Wells: Projects analyzed under this section include a small portion of the South Rincon Pipeline, Basque Hills Well (adjacent to WSA), Long Draw Well (adjacent to WSA), a small portion of the Gusher Well trough relocation and the West Oregon End pipeline (adjacent to WSA).

It is estimated that a maximum area of new disturbance which would be affected by the installation of pipelines and troughs would be 2 acres within WSAs. Approximately 4 acres of disturbance within WSAs would be rehabilitated following the removal of two watering sites to areas which would be outside the WSAs.

During the layout, construction and maintenance phases of the project, approximately 2 acres of disturbance would occur. Soil and vegetation would be disturbed and compacted along the pipeline routes, access roads, and at the well sites.

After the pipeline and wells are in place, the disturbed soil would be visible. These visual impacts would last approximately 3 years. A disturbed area around the water trough would be visible for the life of the project, from a limited distance.

Better distribution of livestock and the implementation of a grazing system which provided for deferment would improve range condition and thus enhance ecological values within WSAs. The projects would alter livestock distribution. Some areas would receive lighter use while others would receive heavier use.

2. Summary

Both key woody and herbaceous upland species would improve under this alternative. Objectives for uplands, riparian, and meadows would be met within the timeframes set for the objectives.

The proposed early use period in the Pueblo Ridge Pasture would allow for achievement of the riparian objective. As livestock progress up in elevation, it is assumed that they would spend most of their grazing time away from riparian zones, due to the length of the proposed grazing period, the livestock numbers, terrain, and expected temperatures. However, riparian areas would receive moderate use during June. The moderate use would be offset by the anticipated regrowth. Woody species condition would improve rapidly and aspen would regenerate in most areas. Utilization on upland meadows is expected to be moderate and objectives for this resource would be met.

As riparian and upland vegetation objectives are met, water quality should move toward meeting water quality standards. Van Horn Creek should provide better fish habitat as the riparian condition and water quality improve.

Grazing use in the Desert Pasture would occur after the critical growing period for key herbaceous species and therefore, the upland objective would be met.

Ecological values associated with the WSAs would be greatly improved by this new grazing system proposal. This would indirectly benefit the other affected wilderness values of naturalness, primitive and unconfined recreation, and scenic. There would also be direct negative impacts to naturalness, primitive and unconfined recreation, and scenic values with the addition of a few new unnatural developments within these WSAs. Solitude would be negatively impacted, but only for a short time during the construction period.

3. Recommended Mitigation

Mitigation measures are addressed throughout this document. The following is a list of some of the mitigating measures addressed in the body of this EA:

- Materials would be transported by helicopter or horseback to project sites located within WSAs to avoid overland vehicle travel.
- Aboveground pipeline and troughs would be painted/camouflaged to blend in with surrounding landscape.
- The new water trough for the South Rincon pipeline extension would be placed at a site with shallow soils and sparse vegetation to reduce impacts to soils and vegetation.
- The propane tank at Gusher Well would be painted or camouflaged to blend in with the surrounding landscape.
- Surface disturbance occurring, as a result of the buried pipeline at Gusher Well, would be contoured back to the lay of the land and planted with native species.
- The Wilderness Specialist would be present during the construction of all projects immediately adjacent to WSAs to ensure proper placement is outside any WSA.
- There would be no blading of fencelines to facilitate construction of fences.
- Fenceposts and water troughs would be of a color that blends into the surrounding vegetation.
- Standard fences would be constructed to reduce the hazard to wildlife.
- As new technology develops and becomes feasible, regarding fencing alternatives, there will be periodic review of options to replace fences in special management areas in order to reduce physical impacts imposed by conventional fencing.
- Prescribed burns would be designed to create a mosaic of wildlife habitat and vegetative communities.
- To prevent rutting and compaction, projects would be constructed while soils are dry or frozen.
- Site-specific cultural and botanical clearances would be conducted prior to any project construction.
- Up to 10 percent of the Rincon seedings and Colony Seeding Pasture would not be treated. This would provide "leave areas" of untreated cover that would be used by nongame wildlife.

D. Alternative C (Additional Projects)

This alternative involves changing grazing use patterns and seasons of use by creating two more pastures than identified in Alternative B. A more extensive amount of project work is proposed to implement a more intensive grazing system.

Impacts to fisheries, water quality, cultural resources, and RNAs/ACECs are essentially the same as those discussed under the preferred alternative. Additional impacts to specific values are discussed below:

1. Environmental Consequences of Alternative C (Additional Projects) Grazing System

Upland Vegetation

All upland areas are expected to improve and meet the prescribed objective.

Essentially, the only difference to upland vegetation from the preferred alternative would result from splitting the Desert Pasture into the Black Rock, North Desert, and South Desert Pastures. This proposal would intensify management of the uplands in the additional pastures by creating the opportunity to defer turnout into the North Desert or South Desert Pastures until August 1, 2 years out of 4. This deferment would ensure seed ripe of all key species within these pastures every other year. Deferment would provide for increased vigor and an appearance of increased plant diversity in both the North Desert and South Desert Pastures.

The intensified management would also reduce approximately 30 percent of the livestock from the west side of the Pueblo Ridge Pasture two consecutive years out of 4. This would reduce utilization within the west side of the Pueblo Ridge Pasture during the grazing seasons when the Black Rock Pasture is being utilized. Upland areas in the Pueblo Ridge Pasture would receive the benefits associated with the reduced use.

The Black Rock Pasture would be rested two consecutive years out of 4. This treatment would ensure seed ripe of all key species within the Black Rock Pasture during rest periods, allowing all plants to complete their life cycles through seed drop.

Oregon End disc and seed would add additional acres of land converted from a sagebrush dominated area to a grassland dominated area. The impacts associated with this project would be the same as with the Colony Seeding project described under the preferred alternative.

Riparian Ecosystems

Impacts to riparian ecosystems would be the same as with the preferred alternative. There would be a 30 percent reduction in livestock numbers on the west side of the Pueblo Ridge Pasture when the Black Rock Pasture is grazed.

Even with the reduced number of livestock it is anticipated that riparian areas would not improve any faster than under Alternative B.

Upland Meadows

Impacts to upland meadows would be similar to those under the preferred alternative. Winnemucca Spring would receive additional deferment from livestock incidental use in the summer. This additional deferment would translate into a possible increased vigor and plant health on the meadow area.

Wildlife and Fisheries

The additional fencing necessary for implementation of this alternative would create additional obstacles to antelope and mule deer. Fence specifications would be in accordance with the "wildlife friendly" design previously discussed so wildlife would be minimally affected.

Additional water sources would be developed in the Basque Hills, North Desert, South Desert and Black Rock Pastures. These additional waters would benefit wildlife, especially antelope.

The Oregon End disc and seed project would convert a brush dominated area to a grassland area. Without brush control, sagebrush would increase in size and density over time. Dense sagebrush cover, over large areas, is usually poor antelope habitat. Maintenance of a low cover form would favor use by antelope.

Removal of encroaching sagebrush and rabbitbrush would reduce cover used by some nongame species, such as black-tailed jackrabbits and reptiles, and would improve it for species using open habitat, such as horned lark.

All other impacts to wildlife and fisheries would be the same as with the preferred alternative.

Wetlands

Impacts to wetlands would be the same as with the preferred alternative.

Water Quality

Impacts to water quality would be the same as with the preferred alternative.

Soils

More soils would be impacted as a result of the additional projects proposed in this alternative. Some soil disturbance would be associated with the laying of the additional Southwest Rincon pipeline, although the pipeline would be ripped into the ground without blading occurring.

Increased numbers of troughs would add disturbance to individual watering sites by way of vegetation removal and compaction from livestock trampling. Additional fencing would create minor disturbance as no blading of fencelines and a minimum of trips during construction would occur. Soil structure should improve as more vegetative material is left and subsequently incorporated into the ground.

Additional acres of brush removal and seeding to grass species would occur with the addition of the Oregon End disking and seeding project. Brush would be removed by disking from approximately 1,700 acres of a now sagebrush-dominated area. Impacts of this brush removal would be the same as those described for Colony Seeding in the preferred alternative.

Cultural Resources

Impacts to cultural resources would be the same as with the preferred alternative.

RNAs/ACECs

With increased deferment of the Long Draw RNA/ACEC from livestock use, there would possibly be a positive affect to the area known as Winnemucca Spring as well as the Indian ricegrass and needleandthread grass communities associated with the area. Additional deferment would allow the plants to drop seed prior to any use occurring 2 years out of 4, which in turn would reduce the impacts associated with grazing.

Visual Quality and Recreation

Impacts to visual quality and recreation would be the same as with the preferred alternative with the following exceptions:

Cross fencing the Desert Pasture and the addition of the Black Rock Drift fence would produce additional visual impacts to the resource as more projects are added to the landscape. Materials painted in natural tones would be used to minimize these impacts. Isolated areas where water troughs are placed, along the Southwest Rincon pipeline extension, would create only minor visual impacts which could be seen from a short distance. The overall scenic quality of the landscape would be conducive to a much better experience with each passing year.

The area associated with the Oregon End seeding project would be changed from a sagebrush dominated area to an area which would be dominated by grass species.

Air Quality

Some additional impacts above those described under the preferred alternative would occur. These additional impacts would be associated with construction of more projects necessary for implementation. Increased airborne dust, during the time of construction, would be the only additional impact.

Wilderness Study Areas

Wilderness values being affected in this alternative include both primary and supplemental values. Primary wilderness values being impacted are naturalness, primitive and unconfined recreation, and to a lesser degree solitude. Supplemental values being impacted include ecological and scenic.

Most of the developments/improvements under this alternative are either outside any WSA or in WSAs but classified as temporary and would be immediately removed if the area(s) were designated as wilderness. A few new developments would be permanent.

Following are a series of tables which summarize the analysis of impacts to wilderness values within each WSA affected by this alternative. These Impacts to Wilderness Values Tables show the effects upon projects being proposed within WSAs or immediately adjacent to their boundaries. A detailed project by project written description of impacts to wilderness value(s) for each affected WSA can be found in Appendix 18.

Each specific project being proposed in this alternative within or immediately adjacent to WSAs is addressed. The context within which the terms "direct", "indirect", "long-term", and "short-term" are defined regarding the wilderness resource is stated as follows:

Direct - An action that would have an immediate impact on the landscape.

Indirect - The result of an action that would have an impact on the landscape over time.

Long-Term - A project or action that is deemed as permanent or would create surface disturbance.

Short-Term - A project or action that is temporary (has an established termination timeframe) and would not create surface disturbance beyond normal, routine, and authorized use.

TABLE 11

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE C

Pueblo Mountains WSA (2-81) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Oregon End Fence	N/A	N/A	S	N/A	N/A	1-mile adjacent to WSA following powerlines
Rincon-Oregon End Fence	D,N,L	D,N,L	D,N,S	P,L	D,N,L	.25-mile in WSA, 2.75 miles adjacent to WSA
Pueblo Mountains Gap Fences (3)	D,N,L and P,I,L	D,N,L and P,I,L	N/A	P,D,I	N,D,L and P,I,L	3 gap fences for a total of .625-mile inside WSA
South Rincon Pipeline	N/A	N/A	D,N,S	N/A	D,N,S	.25-mile in WSA. Remaining adjacent to WSA

Description of Abbreviation

D = Direct L = Long-Term P = Positive

I = Indirect S = Short-Term N = Negative

N/A = Not Applicable to this alternative or no impact to the wilderness value identified

TABLE 12

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE C

Rincon WSA (2-82) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Rincon-Oregon End Fence	D,N,L and I,P,L	D,N,L	D,N,S	P,L,I and N,I	D,L,N	.25-mile in WSA, 2.75 miles adjacent to WSA
Catlow Gap Fences (2)	D,N,L and I,P,L	D,N,L	D,N,S	P,I	D,L,N	2 fences for a total of 1-mile in WSA
Long Draw Gap Fence	D,N,L and I,P,L	D,N,L	D,N,S	P,I	D,L,N	150-foot fence inside WSA, remaining adjacent
South Rincon Pipeline	D,N,L	N/A	D,N,S	P,D,I,S	D,N,S	.25-mile in WSA. Remaining adjacent to WSA
Long Draw Well	D,N,L	N/A	D,N,S	D,N	D,N,L	Immediately adjacent to WSA
Basque Hills Well	N/A	N/A	D,N,S	D,N and I,P	N/A	Close proximity to WSA
West Oregon End Pipeline	D,P,L	N/A	D,N,S	N/A	P,D,L	Remove trough in WSA, 2 miles of pipe adjacent
Black Rock Drift Fence	D,N,L	D,N,L	D,N,S	P,I	D,N,L	2.5 miles of fence within WSA
Desert Division Fence	D,N,L	D,N,L	D,N,S	P,I	D,N,L	4.5 miles of fence within WSA
Southwest Rincon Pipeline Extension	D,N,L	D,N,L	D,N,S	P,I	D,N,L	2 miles pipeline within WSA
Coyote Hole Well	N/A	N/A	D,N,S	N/A	N/A	Immediately adjacent to WSA

Description of Abbreviation

D = Direct L = Long-Term P = Positive

I = Indirect S = Short-Term N = Negative

N/A = Not Applicable to this alternative or no impact to the wilderness value identified

TABLE 13

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE C

Basque Hills WSA (2-84) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Basque Hills Well	N/A	N/A	D,N,S	I,N	N/A	Close proximity to WSA
Gusher Well Trough Relocation	D,P,L	N/A	D,N,S	D,I,P	D,P	Remove water development/restoration inside WSA
North Basque Hills Well	D,N,L	N/A	D,N,S	N/A	D,N,L	Well is in center of WSA

TABLE 14

IMPACTS TO WILDERNESS VALUES - ALTERNATIVE C

Hawk Mountain WSA (1-146A) Wilderness Values Being Affected

Project Name	Naturalness	Primitive and Unconfined Recreation	Solitude	Ecological	Scenic	Amount of project within or adjacent to WSA
Long Draw Well	D,N,L	N/A	D,N,S	D,N	D,N,L	Immediately adjacent to WSA

Description of Abbreviation

D = Direct L = Long-Term P = Positive

I = Indirect S = Short-Term N = Negative

N/A = Not Applicable to this alternative or no impact to the wilderness value identified

Other projects included in this alternative, but not addressed in the Impacts to Wilderness Values Tables because they do not represent developments and require an analysis are as follows:

Lone Mountain Prescribed Burn: Impacts would be the same as those identified under the preferred alternative.

Livestock Grazing Periods of Use: This overall change in livestock management, from the current situation to the one outlined in this alternative, would be positive for all wilderness values. Ecological values would be directly enhanced through improved vegetation communities in all WSAs. Upland vegetation within the proposed Pueblo Ridge, Black Rock, North Desert and South Desert Pastures would benefit to a higher degree than under the preferred alternative. This would indirectly have a positive influence to naturalness, primitive and unconfined recreation, and scenic values.

Following is a generalized description of developments that affect wilderness values of WSAs.

Fencing: Additional projects proposed under this alternative within WSAs under this alternative include the Black Rock Drift fence and a portion of the Desert Division fence.

Construction of these fences would assist in the improvement of the watershed and upland condition by permitting implementation of the grazing system described in the Description of the Alternatives section (beginning on page 48) for Alternative C.

Pipelines and Wells: The projects proposed within WSAs under this alternative are the Southwest Rincon pipeline extension and the North Basque Hills Well.

It is estimated that 7 acres would be the maximum area of new disturbance affected by the installation of an additional well and pipeline and troughs. Soil and vegetation would be disturbed and compacted along the pipeline routes, access roads, and at the well sites.

After the pipeline and well are in place, the disturbed soil would be visible. These visual impacts would last approximately 3 years. A disturbed area around the water trough would be visible from a limited distance for the life of the project.

Better distribution of livestock and the implementation of a grazing system which provided for deferment would improve upland range condition. The projects would alter livestock distribution. Some areas would receive lighter use while others would receive heavier use.

Additional impacts would be the same as those described under the preferred alternative.

3. Summary

Both key woody and herbaceous upland species would improve under this alternative. Objectives for uplands, riparian, and meadows would be met within the timeframes set for the objectives.

The proposed early use period in the Pueblo Ridge Pasture would allow for achievement of the riparian objective. As livestock progress up in elevation, it is assumed that they would spend most of their grazing time away from the riparian zones due to the length of the proposed grazing period, the livestock numbers, terrain, and expected temperatures. However, riparian areas would receive moderate use during June. The moderate use would be offset by the anticipated regrowth. Woody species condition would improve rapidly and aspen would regenerate in most areas. Utilization on upland meadows is expected to be moderate and objectives for this resource would be met.

Use in the North Desert, South Desert, and Black Rock Pastures would occur after the critical growing period for key herbaceous species and, therefore, the upland objective would be met. Additionally, the North Desert and South Desert Pastures would be deferred until August 2 years out of 4 which would ensure that the plants in the late use pasture have reached seed ripe and stored the maximum amount of root reserves. This grazing treatment would also enhance seedling establishment by having more cattle in the pasture incorporating seed into the soil after seed ripe.

Fish habitat and water quality would improve as the riparian areas improve.

There would be direct, negative, and long-term impacts to WSAs regarding those affected wilderness values of naturalness, primitive and unconfined recreation, and scenic with the extent of the projects being proposed in this alternative. Over time, ecological values would show improvement by better controlling livestock.

4. Recommended Mitigation

Mitigation measures are addressed throughout this document. The following is a list of some of the mitigating measures addressed in the body of this EA:

- Materials would be transported to project sites located within WSAs by helicopter or horseback to avoid overland vehicle travel.
- Aboveground pipelines and troughs would be painted/camouflaged to blend in with surrounding landscape.
- The new water trough for the South Rincon pipeline extension would be placed at a site with shallow soils and sparse vegetation to reduce impacts to soils and vegetation.

- Propane tanks at Gusher Well and North Basque Hills Well would be painted or camouflaged to blend in with the surrounding landscape.
- Surface disturbance occurring, as a result of the buried pipeline at Gusher Well, would be contoured back to the lay of the land and planted with native species.
- The Wilderness Specialist would be present during the construction of all projects immediately adjacent to WSAs to ensure proper placement is outside any WSA.
- There would be no blading of fencelines to facilitate construction of fences.
- Fenceposts and water troughs would be of a color that blends into the surrounding vegetation.
- Standard fences would be constructed to reduce the hazard to wildlife.
- As new technology develops and becomes feasible regarding fencing alternatives, there will be periodic review of options to replace fences in special management areas in order to reduce physical impacts imposed by conventional fencing.
- Prescribed burns would be designed to create a mosaic of wildlife habitat and vegetative communities.
- Projects would be constructed while soils are dry or frozen to prevent rutting and compaction.
- Site-specific cultural and botanical clearances would be conducted prior to any project construction.
- Up to 10 percent of the Rincon seedings and Colony Seeding Pasture would not be treated. This would provide "leave areas" of untreated cover that would be used by nongame wildlife.
- Up to 10 percent of the Oregon End disc and seed area would be left as cover areas for nongame species.

V. CUMULATIVE IMPACTS

Fisheries (Alternative A)

The Lahontan cutthroat trout is currently a Federally threatened species with a recovery objective of delisting (USFWS 1995). The population in Van Horn Creek is one of nine Alvord Lake Basin populations that were transplants from the Coyote Lake Basin. There are only 10 populations of the Coyote Lake strain within their native range. Part of the delisting criteria is maintaining the nine transplanted populations in the Alvord Lake Basin as remnant sources of the Coyote Lake strain and possible donor sources, if needed, for reintroductions into the Coyote Lake systems. All of the delisting criteria would need to be met for the Coyote Lake strain as well as the Quinn River/Black Rock Desert strain and the Humboldt River strain, before the Northwestern Lahontan Basin population of the Lahontan cutthroat trout could be considered for delisting (USFWS 1995).

Of the nine transplanted Alvord Lake Basin populations, only four are currently known or suspected to persist, including the population of Van Horn Creek. The Lahontan cutthroat trout is possibly absent from two of the other five streams, based on 1991 and 1993 surveys. Its presence is unknown in the other three streams (based on 1983 surveys). Even if the populations are present in the other five streams, they are probably depressed as a result of the recent period of severe drought in the area.

The possible degradation of Lahontan cutthroat trout habitat and reduction in the population in Van Horn Basin, along with the possible drought-related losses or impacts to other populations in the Alvord Lake Basin would create the cumulative impact of putting the Coyote Lake strain at risk through loss of reserves of the remnant population. As a result, delisting of the Northwestern Lahontan Basin population would be more difficult.

Fisheries (Alternatives B and C)

Improvement of the Van Horn Basin aquatic habitat would have the cumulative beneficial effect of progressing toward the overall recovery objective of delisting the Lahontan cutthroat trout (USFWS 1995). The population in Van Horn Creek is one of nine Alvord Lake Basin populations that were transplants from the Coyote Lake Basin. There are only 10 populations of the Coyote Lake strain within their native range. Part of the delisting criteria is maintaining the nine transplanted populations in the Alvord Lake Basin as remnant sources of the Coyote Lake strain and possible donor sources, if needed, for reintroductions into the Coyote Lake systems. All of the delisting criteria would need to be met for the Coyote Lake strain as well as the Quinn River/Black Rock Desert strain and the Humboldt River strain, before the Northwestern Lahontan Basin population of the Lahontan cutthroat trout could be considered for delisting (USFWS 1995).

Vegetation (Alternative A)

Under this alternative current vegetative condition would continue to decline.

Vegetation (Alternatives B and C)

Current range condition would improve, especially on meadows and in riparian areas. Plant vigor and overall health in upland areas would improve as plants are no longer grazed through the entire critical growing period. Riparian vegetation would improve as increased diversity develops.

Livestock (Alternative A)

Under this alternative, the amount of livestock forage consumed from the allotment would remain at about 15,448 AUMs until a formal allotment evaluation is conducted. The allotment evaluation to assess the riparian impacts associated with this seasonlong grazing scenario would probably find that large reductions of livestock numbers and extensive herding of animals would be required to prevent continued degradation of riparian and aquatic habitats. In the long term, 3 years out and beyond, fewer livestock and less livestock forage would be authorized on the allotment than under Alternatives B or C.

Livestock (Alternative B)

Under this alternative, the initial livestock forage allocation would be 15,448 AUMs, however, due to the hot, dry conditions in the proposed Desert Pasture in August and September, forage use is anticipated to be between 10,000-12,000 AUMs. This represents a 20-35 percent reduction of available forage. Any use below the current active preference of 15,448 would be at the discretion of the livestock operators. If Alternative B is implemented, an allotment evaluation would be conducted about 3 years after implementation to assess if allotment objectives are being met and to redetermine the livestock forage allocation. This available forage determination would be based upon the monitoring results and may be an increase or decrease from the current livestock preference.

Livestock (Alternative C)

Impacts to the livestock program under this alternative are similar to those identified under Alternative B. The additional water developments and the rest treatment afforded the proposed Black Rock Pasture would provide an estimated 1,000 AUMs more than Alternative B due to an increase in residual forage and the ability to disperse livestock over more of the Desert Pasture, allowing more uniform utilization of the area. Additionally, the 1,700-acre disc and seed proposed for the southern end of the allotment would offset the possible forage reduction anticipated for the Oregon End Ranch.

Wilderness Study Areas (Alternative A)

There are no developments or improvements under this alternative. Ecological values associated with all affected WSAs would continue to decline.

Wilderness Study Areas (Alternative B)

Pueblo Mountains WSA: There would be a total of three new permanent fence projects totaling .625-mile. There would also be two projects that would be immediately adjacent to, but outside the WSA. Projects in this alternative would bring the total of existing unnatural developments from 72 to a new total of 75 within the WSA. Of this total, the three new fences being proposed would increase 4 miles of existing fences to a new total of 4.6 miles.

Although these additional projects place the WSA close to reaching a threshold that would infringe upon the primeval character of the land, they would not substantially change or alter the characteristic of the wilderness landscape nor create a situation that would influence any future actions of Congress to decide the fate of these lands. The overall benefits of protecting resources achieved by these developments, coupled with the minor amount of these new structures, would offset the negative influence imposed by these developments.

Rincon WSA: There would be one prescribed burn on Lone Mountain for approximately 2,500 acres. A trough and 150 feet of old fence would be removed. One temporary project, an aboveground pipeline with associated water trough, would be placed. There would be an addition of three new fences totaling approximately 1-mile. There would also be four projects directly adjacent to the WSA, but outside its boundary. Projects within this alternative would bring the total of existing unnatural developments from 75 to a new total of 79 within the WSA, which includes one temporary aboveground pipeline. Of this total, the three new fences being proposed would increase the 23 miles of existing fences to a new total of 24 miles.

The southern and extreme northern portions of this WSA have a larger concentration of developments than in any other location in this large WSA. Any further structures placed in these areas would exceed the threshold of wilderness suitability and could constrain Congress's decision to determine the fate of these lands under wilderness considerations. The fences being proposed are located in the west central portion of the WSA, away from the areas mentioned above.

Basque Hills WSA: There is one project within this WSA, that would remove Gusher Well trough and provide for site restoration. There would also be one project that would be immediately adjacent to, but outside the WSA. Projects within this alternative would reduce the total existing unnatural developments from 42 to a new total of 41.

Cumulative impacts would all be positive regarding the wilderness resource, as the WSA would become slightly more natural. There would be direct impacts to the primary wilderness values, but ecological conditions over time will be greatly improved.

Hawk Mountain WSA: There would be no cumulative impacts in the Hawk Mountain WSA since no projects are being proposed within this area.

Wilderness Study Areas (Alternative C)

Pueblo Mountains WSA: The situation in this alternative is the same as stated in the Cumulative Impacts section under Alternative B as no new projects are being proposed.

Rincon WSA: There would be six new permanent projects including: Lone Mountain prescribed burn, 2.6 miles of pipelines with associated water developments, and 9.5 miles of new fence. There are five projects directly adjacent to the WSA, but outside its boundary. Projects within this alternative would bring the total of existing unnatural developments from 75 to a new total of 80 within the WSA, which includes pipelines and associated watering developments and fences. Of this total, the five new fences being proposed would increase the 23 miles of existing fences to a new total of 31 miles.

These proposed developments would exceed the threshold of the WSA to maintain its high quality wilderness characteristics and could constrain Congress's decision whether or not to designate these lands as wilderness.

Basque Hills WSA: There would be two projects, Gusher Well trough removal and site rehabilitation and the North Basque Hills Well, that are within the WSA. There would be two projects directly adjacent to the WSA, but outside its boundary. There would be one development removed from the WSA and another one constructed (new well) in this alternative keeping the same amount of unnatural developments at 42.

Additional new developments in this WSA would further infringe upon the value of naturalness. This WSA is in a relatively natural condition and any new permanent development would adversely impose on wilderness values.

Hawk Mountain WSA: There would be no cumulative impacts in the Hawk Mountain WSA as no projects are being proposed within this area.

Wildlife (Alternative A)

Wildlife habitat would remain at risk. With the exception of species that use areas mostly inaccessible to livestock, there would be strong competition for forage. Wildlife dependent on riparian and meadow areas, during some time of the year, would be negatively affected by degrading conditions that would continue.

Wildlife (Alternatives B and C)

Under both alternatives there would be both long-term and short-term benefits to wildlife species. Improved habitat conditions in nearly all areas of the allotment would translate to healthier populations and improved survivability overall.

VI. GLOSSARY

Alkalinity: Quantity and kinds of compounds present which collectively shift the pH to the alkaline side of neutrality. Usually imparted by the presence of bicarbonates, carbonates, and hydroxides, and less frequently in inland waters by borate, silicate, and phosphates. Frequently measured in milligrams per liter (parts per million) of CaCO_3 .

Animal Unit Month (AUM): A standardized measurement of the amount of forage necessary for the sustenance of one cow unit, or bull, or steer or its equivalent for 1-month (approximately 800 pounds of forage). A cow also includes a calf up to 6 months of age.

Aquatic Habitat Condition: Habitat condition ratings are obtained by walking along streams and surveying their physical and biological characteristics. Habitat condition ratings are based on many factors. Key factors include the percent of stream shaded, vegetation species composition and vigor, the abundance of these species, the intensity of livestock use within the riparian zone, and the degree of grazing use on riparian species, presence of dead trees and shrubs, the stability of streambanks, gullying, sedimentation of pools, stream meandering, stream gradient, and other factors. Habitat condition ratings are based on all factors. No single factor is weighted above another. Indicators of habitat quality are interrelated and the biotic potential of each stream segment must be considered.

Beneficial use: The reasonable use of water for a purpose consistent with the laws and best interest of the peoples of the state.

Boot (phenological stage): A term used to describe the stage of development of grasses where there is a discernible floral sheath to the point of peak flowering (anthers displayed).

Ecological Site: A kind of land with a specific potential natural community (plants) and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management. Syn. *ecological type*, *ecological response unit*. cf. *range site*.

Ecological Site Inventory: The basic inventory of present and potential vegetation on BLM rangelands. Ecological sites are differentiated on the basis of significant differences in kind, proportion or amount of plant species present in the plant community. Ecological site inventory utilizes soils, the existing plant community and ecological site data to determine the appropriate ecological site for a specific area of rangeland and to assign the appropriate ecological status and range condition.

Ecological Status: The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree of which the kinds, proportions, and amounts of plants in a community resemble that of the potential natural community. If classes or ratings are used, they should be described in ecological rather than utilization terms. There are four classes of ecological status ratings (early seral, mid-seral, late seral, potential natural community) of vegetation corresponding to 0-25 percent, 26-50 percent, 51-75 percent, and 76-100 percent of the potential natural community standard. Soil status is a measure of present vegetation and litter cover relative to the amount of cover needed on the site to prevent accelerated erosion.

Ecological Type: A land classification category which is more specific than a phase of a habitat type. Ecological types are commonly used to differentiate habitat phases into categories of land which differ in their ability to produce vegetation or their response to management. Syn. *ecological response unit, ecological site*.

Existing Use: A use that was clearly taking place on the lands as of the date of approval of FLPMA (October 21, 1976).

Federal Category 2 Candidate Species: A species which is being considered for listing as threatened or endangered under the Endangered Species Act.

FLPMA: Federal Land Policy and Management Act of 1976 (Public Law 94-579, 90 Stat. 2743, 43 USC 1701).

Grandfathered Uses: Grazing, mining, and mineral leasing uses that existed on the date of approval of FLPMA (October 21 1976) may continue on lands under wilderness review in the same manner and degree as on that date.

Hardness: Assessment of the quality of water supplies as governed by the content of calcium and magnesium salts, largely combined with bicarbonate and carbonate and with sulfates, chlorides, and other anions of mineral acids. The American unit for hardness, the degree, is equivalent to 1 milligram per liter of CaCO_3 .

Mature (phenological stage): A term used to describe the stage of development of grasses from the beginning of seed shatter to a noticeable drying indicating dormancy.

Naturalness: An area that generally appears to have been affected primarily by the forces of nature with the imprint of people's work substantially unnoticeable.

Nonpoint source: An activity, event, or structure creating a product or process which enters a waterbody by diffuse means and not through a pipe and causes a water quality or stream quality problem.

Nonpoint source pollution: The contribution of material from nonpoint sources that produce a water quality or stream quality problem.

Phenological Stage: The recurrent stages of development in vascular plants.

Preboot (phenological stage): A term used to describe the stage of development of grasses just before there is a discernible floral sheath.

Primitive and Unconfined Recreation: Nonmotorized and undeveloped types of outdoor recreational activities.

Range Condition: The present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site. cf. ecological status.

Riparian Habitat: The green strip of sub-irrigated vegetation along perennial streams.

Riparian Habitat Condition: Condition ratings are based on a variety of factors including plant species composition, percent cover, height of riparian shrubs and trees, streambank erosion, plant reproduction, site potential, and other factors. No one criteria was used singly to determine the condition rating.

Roadlessness: Refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use.

Satisfactory Condition: Stable soil condition, ground cover at or near potential, and diversity of native perennial plant species. The site is at or moving toward the desired plant community which would best fulfill allotment management objectives.

Sedimentation: The accumulation of settled solids which interfere with beneficial uses of water.

Seed Ripe (phenological stage): A term used to describe the stage of development of grasses where seed becomes hard to the beginning of seed shatter.

Size of WSAs: Roadless areas of 5,000 acres or more.

solitude: The state of being alone or remote from habitations; a lonely, unfrequented, or secluded place.

Suspended Sediment (suspended solids): Suspended sediment refers to that portion of the sediment load suspended in the water column. Criteria are established for solids and turbidity primarily due to their effect on productivity by reducing light penetration.

Trend in Range Condition: Trend in range condition or ecological status should be described as up, down or not apparent. Up represents a change toward climax or potential natural community; down represents a change away from climax or potential natural community; and not apparent indicates there is no recognizable change. This category is often recorded as static or stable.

Turbidity (also see suspended sediment): Turbidity is an expression of the optical property of water that scatters light. The scattering increases with suspended particulate matter, which may be organic or inorganic.

Utilization: The proportion of current year's forage production consumed or destroyed by grazing animals. This may refer either to a single species or to the whole vegetative complex. Utilization is expressed as a percent by weight, height or numbers within reach of the grazing animal. Five levels of utilization are used in this document - slight (0-20 percent), light (21-40 percent), moderate (41-60 percent), heavy (61-80 percent), and severe (81-100 percent).

Water contact recreation: Recreational activities where one has the potential to come in contact with surface waters.

Way: A track maintained solely by the passage of vehicles which has not been improved and/or maintained by mechanical means to ensure relatively regular and continuous use.

Wilderness Study Area (WSA): A roadless area or island that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

Wilderness Values: Roadlessness, naturalness, solitude, primitive and unconfined recreation, and size make up the primary wilderness values. Supplemental values include ecological, geological, scientific, educational, scenic, and historic.

VII. PERSONS, GROUPS, AND GOVERNMENT AGENCIES CONSULTED

Harney County Commissioners
Izaak Walton League
Livestock Permittees
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon Natural Desert Association
Oregon Watershed Improvement Coalition
Sierra Club

VIII. INTENSITY OF PUBLIC INTEREST

A high degree of public interest is expected for this allotment. Most interest to date centers around livestock use and WSAs.

IX. PARTICIPATING STAFF

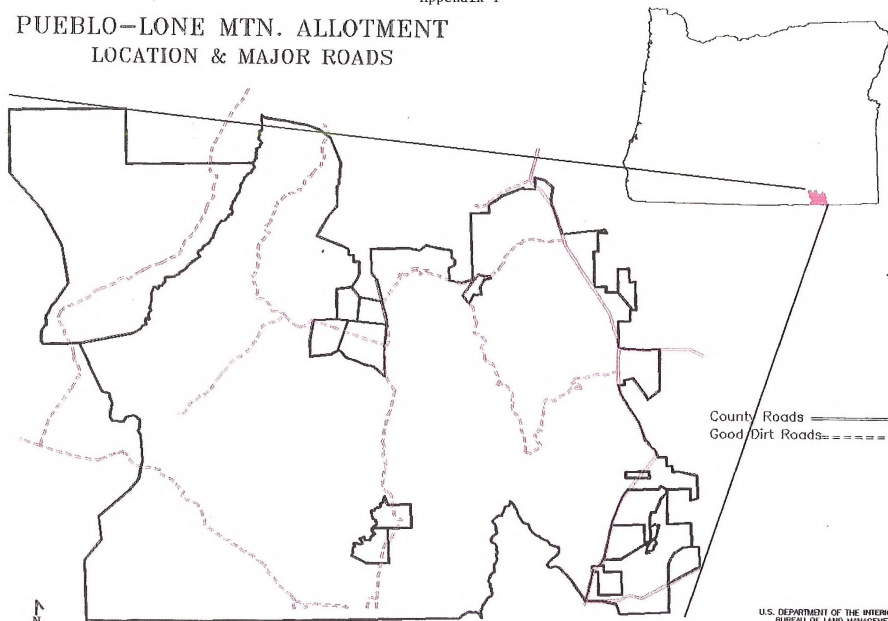
Team Leader - Willie Street - Range Management Specialist
Steve Anderson - Acting Andrews Resource Area Manager
Lee Benson - Range Conservationist
Gordon Bentley - Environmental Coordinator
Bruce Crespin - Archaeologist
Gerry Fullerton - Oregon State Office Range Management Specialist
Rick Hall - Natural Resource Specialist
Ed Horn - Soil Scientist
Pam Keller - Geographic Information System Coordinator
Everett Lofgren - Range Conservationist (retired)
Fred McDonald - Natural Resource Specialist - Recreation
Scott Moore - Wilderness Specialist
Georgina Sato - Fisheries Biologist
Guy Sheeter - Wildlife Biologist
Mark Sherbourne - Supervisory Natural Resource Specialist
Cam Swisher - Range Technician
Ron Wiley - Oregon State Office Fisheries Biologist

LITERATURE CITED

- Bayless, S. 1969. Winter food habitats, range use, and home range of antelope in Montana. *J. Wildl. Manage.* 33(3):538-551.
- Bureau of Land Management. December 1989. Final Oregon Wilderness Environmental Impact Statement, USDI. Volume II beginning on page 273 and Volume III beginning on pages 267, 325, and 395.
- Burkhardt, J.W. and E.W. Tisdale. 1976. Causes of Juniper Invasion in Southwestern Idaho *Ecology* (1976) 57: pp. 472-484.
- Cole, D.N. April 1994. The Wilderness Threats Matrix: A Framework for Assessing Impacts, USDA, Forest Service, Intermountain Research Station, Research Paper INT-475.
- DEQ (Oregon Department of Environmental Quality). 1988. 1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution. Oregon Department of Environmental Quality. 169 pp. + appendices.
- Eckert, R.E. Jr. 1983. Methods for improving mountain meadow communities. USFS, Gen. Tech. Dept., INT-157. pp. 67-75, Ogden, UT.
- Gruel and Eddleman (unpubl.).
- Houston, D.B. 1973. Wildfires in Northern Yellowstone National Park, *Ecology* 54:1109-1117.
- Maser, C., J.W. Thomas, and R.L. Anderson. 1984. The relationship of terrestrial vertebrates to plant communities, Part 2, Appendices IN wildlife habitats in managed rangelands - The Great Basin of Southeastern Oregon. USFS Gen. Tech. Rpt. PNW-172, pp. 235.
- Mason, E. 1952. Food habitats and measurements of Hart Mountain antelope. *J. Wildl. Manage.* 16(3):387.
- U.S. Fish and Wildlife Service. 1995. Lahontan cutthroat trout, *Oncorhynchus clarki henshawi*, Recovery Plan. Portland, OR., 147 pp.
- Van Dyke, W.A. 1978. Population characteristics and habitat utilization of bighorn sheep, Steens Mountain, Oregon. M.S. Theses. Oregon St. Univ., Corvallis, OR., 87 p.

APPENDICES

PUEBLO-LONE MTN. ALLOTMENT LOCATION & MAJOR ROADS



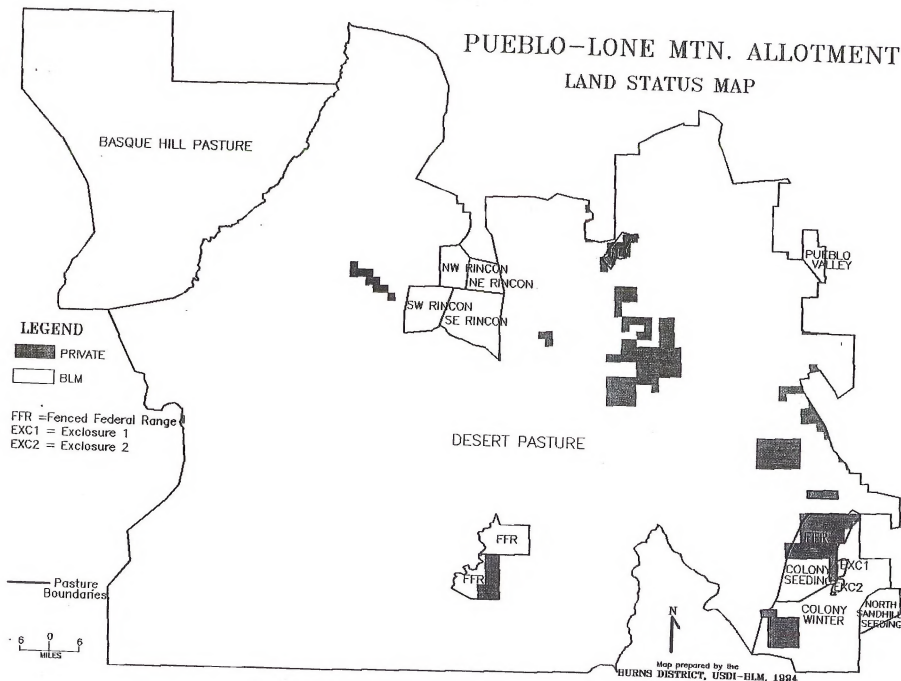
N
NO SCALE AVAILABLE

County Roads —————
Good Dirt Roads - - - - -

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1994

MAP PREPARED BY THE BURNS DISTRICT
THROUGH BLM-COMMUNITY ACTION CENTER

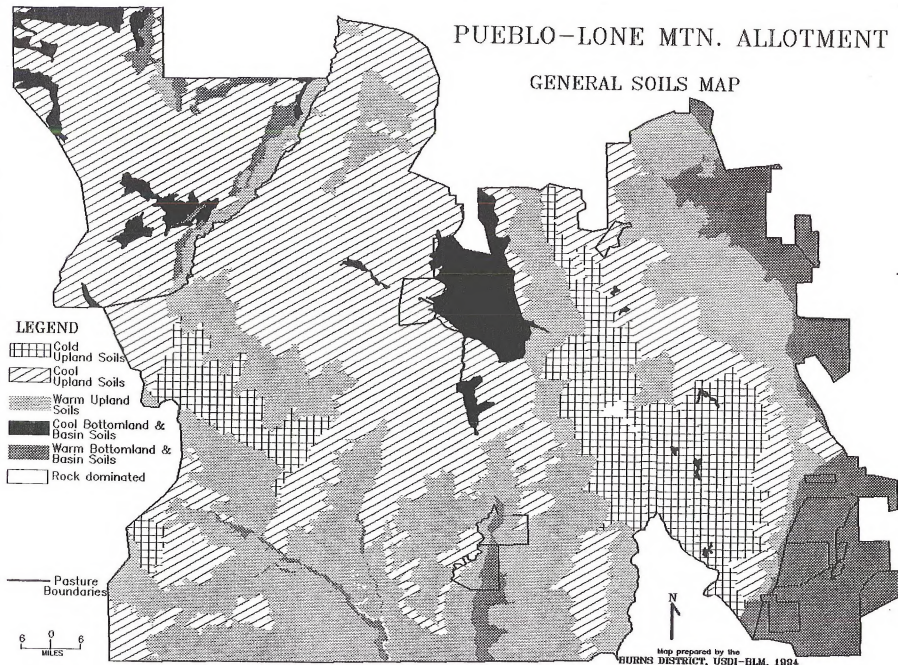
PUEBLO-LONE MTN. ALLOTMENT LAND STATUS MAP



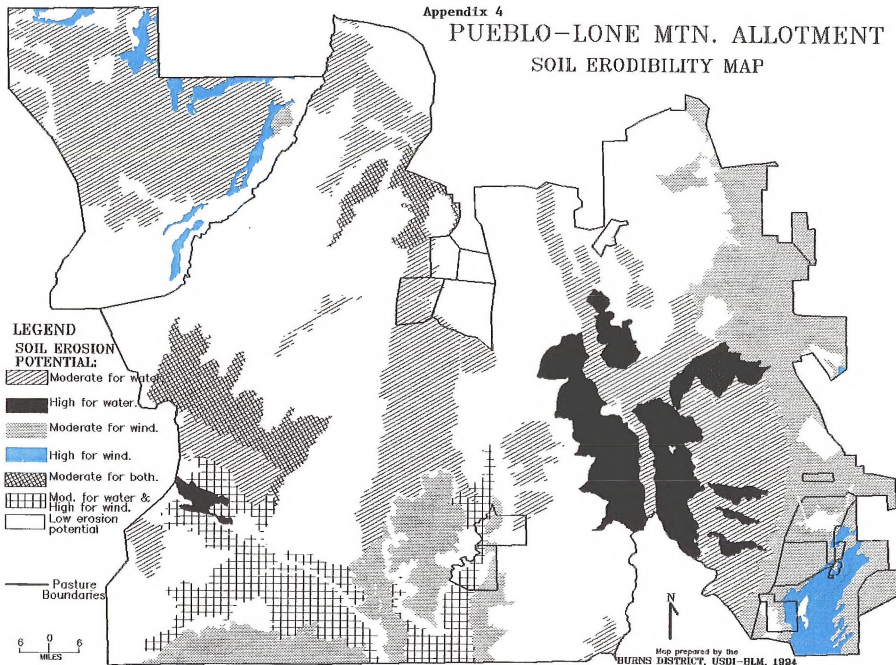


PUEBLO-LONE MTN. ALLOTMENT

GENERAL SOILS MAP

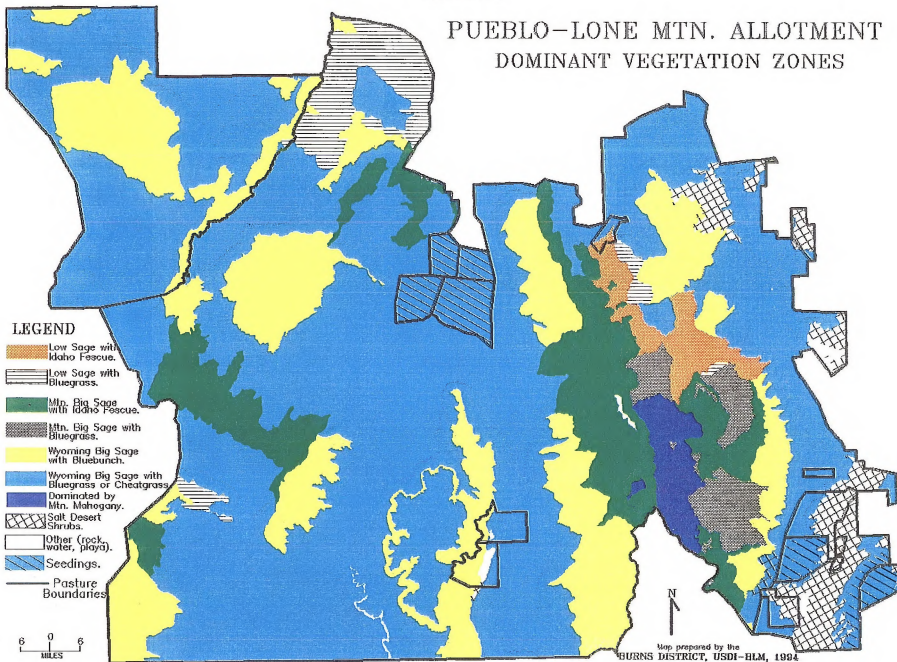


PUEBLO-LONE MTN. ALLOTMENT SOIL ERODIBILITY MAP



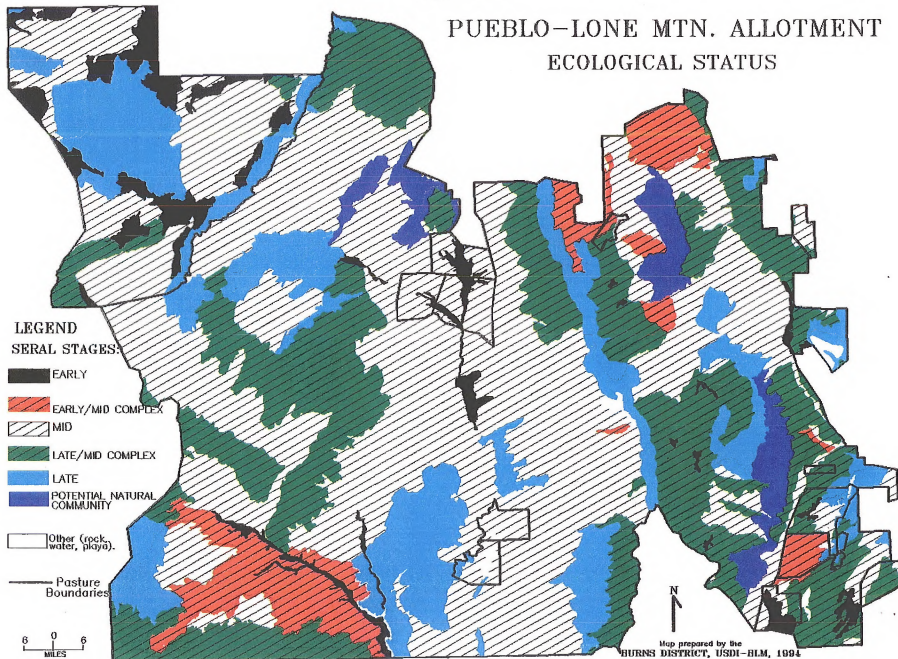


PUEBLO-LONE MTN. ALLOTMENT DOMINANT VEGETATION ZONES





PUEBLO-LONE MTN. ALLOTMENT ECOLOGICAL STATUS





APPENDIX 7

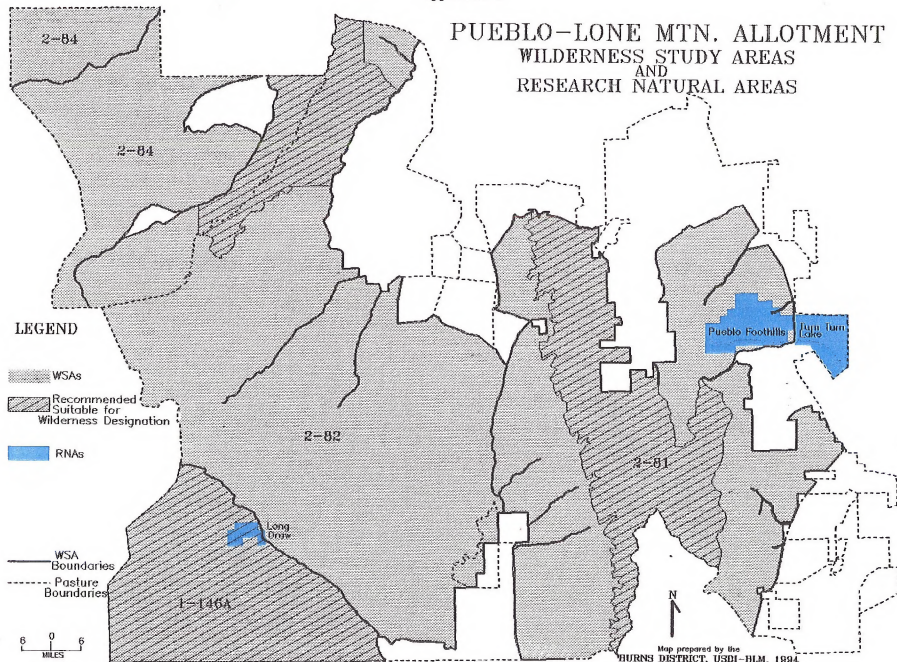
SPECIAL STATUS PLANT SPECIES LIST
FOR
PUEBLO-LONE MOUNTAIN ALLOTMENT

SCIENTIFIC NAME	COMMON NAME	USFWS STATUS	ODA STATUS	ONHP LIST
<u>Agastache cusickii</u>	Cusick's hyssop	--	--	2
<u>Allenrolfea occidentalis</u>	iodine bush	--	--	2
<u>Chaenactis macrantha</u>	large-flowered chaenactis	--	--	2
<u>Chaenactis stevioides</u>	broad-flowered chaenactis	--	--	2
<u>Cymopterus purpurascens</u>	purple cymopterus	--	--	2
<u>Eriogonum ochrocephalum</u> <u>spp. calcareum</u>	ochre-flowered buckwheat	--	--	3
<u>Melica stricta</u>	nodding melic	--	--	4
<u>Phacelia gymnoclada</u>	naked-stemmed phacelia	--	--	2
<u>Sesuvium verrucosum</u>	verrucose sea purslane	--	--	2
<u>Stipa speciosa</u>	desert needlegrass	--	--	2

Oregon Natural Heritage Program List (ONHP)

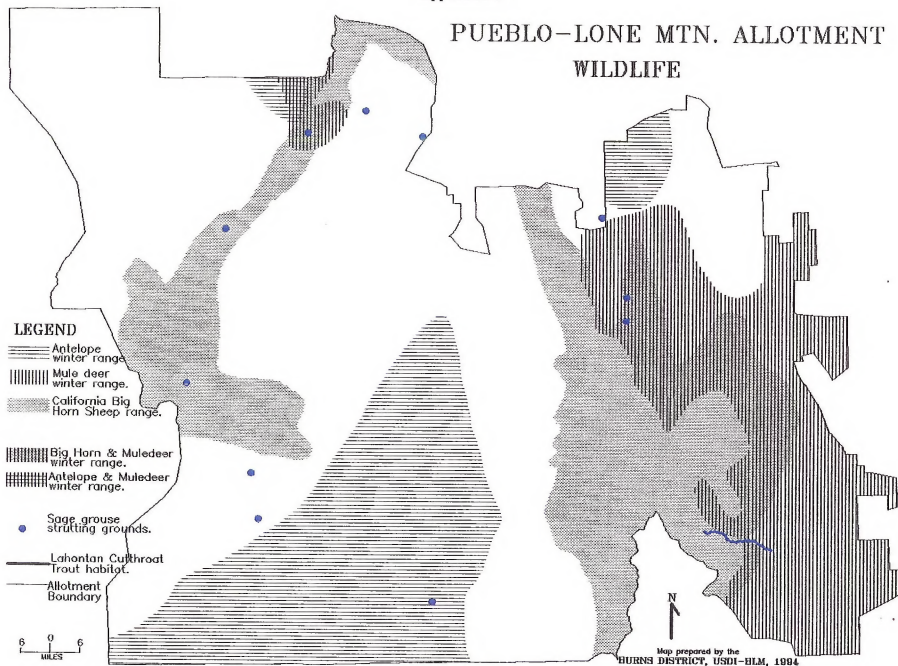
- 1 = Taxa threatened with extinction or presumed to be extinct throughout the entire range.
 2 = Taxa threatened with extinction or presumed to be extinct in Oregon.
 3 = Review list for species where more information is needed before status can be determined.
 4 = Taxa of concern but not currently threatened or endangered.

PUEBLO-LONE MTN. ALLOTMENT WILDERNESS STUDY AREAS AND RESEARCH NATURAL AREAS





PUEBLO-LONE MTN. ALLOTMENT WILDLIFE



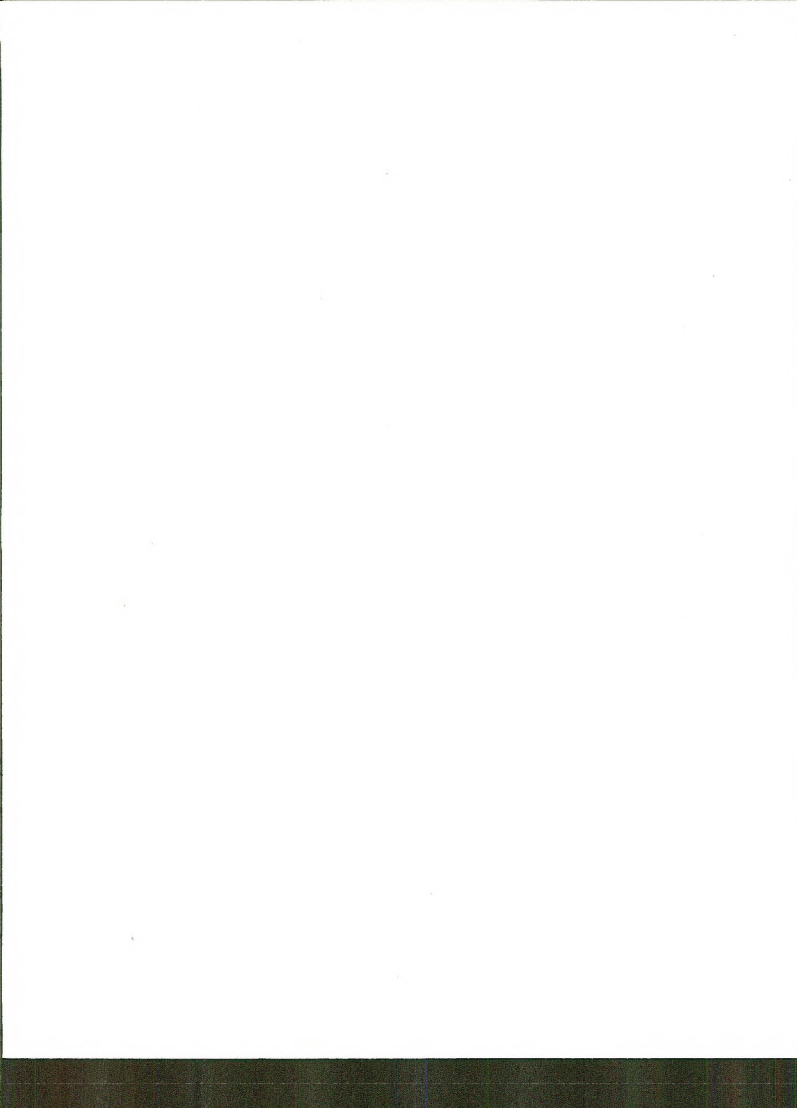
APPENDIX 10

BUREAU OF LAND MANAGEMENT INTERIM MANAGEMENT POLICY (IMP) FOR LANDS UNDER WILDERNESS REVIEW

The only activities permissible in WSAs are temporary uses. Temporary uses are activities that create no new surface disturbance, do not require reclamation, nor involve permanent placement of structures. If authorized, such temporary uses may continue until Congress acts, as long as such uses can easily and immediately be terminated at the time of wilderness designation.

The only exceptions permitted to the above general rule are:

1. Emergencies such as suppression activities associated with fires or search and rescue operations;
2. Activities which are considered grandfathered or valid existing rights under the IMP;
3. Reclamation activities designed to minimize impacts to wilderness values created by IMP violations;
4. Activities that protect or enhance the land's wilderness values (see glossary for description of wilderness values). Projects that may be considered to enhance wilderness values in a portion of the WSA but are anticipated to create degradation of wilderness values overall or to other portions of the WSA should not be approved.



APPENDIX 11
PUEBLO-LONE MOUNTAIN ALLOTMENT MONITORING PLAN

1. RIPARIAN		
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Utilization (herbaceous and woody)	Herbaceous: key forage species method (volume)	BLM annually (periodically through growing season and end of the grazing season)
	Woody: twig length	BLM annually
Change in Vegetation (trend)	Photo points	BLM annually
	Aerial photo interpretation	BLM 1995
Animal Distribution	Use supervision	BLM throughout season - annually

2. UPLANDS		
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Vegetation Change (trend)	Pace 180° transect-cover/plant composition	BLM - every 5 years
	Photos overview transect and 3 x 3 plot	BLM - every 5 years
	Ecological site reevaluation at key areas	BLM - 10 to 15 years
	GIS ecological lite maps dominate vegetation acres	BLM 1994
	Bitterbrush and Mountain Mahogany: Cole browse transect	BLM annually
Utilization	Key forage species method (volume)	BLM annually
Animal Distribution	Use supervision	BLM annually
	Actual use and annual allotment summary reports	BLM annually



3. T&E SENSITIVE PLANTS

WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Identify Known Population and Their Habitat	Occurrence and estimate population counts	BLM annually (RNAs/ACECs)

4. WILDERNESS AND OTHER SPECIAL MANAGEMENT AREAS

WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Occurrence of Ground Disturbance and Wilderness Use	Surveillance for interim management of WSAs Photo points at campsites or sites of human impact (limits of acceptable change)	BLM annually BLM annually
Determine Condition and Trend for Plant Communities Within RNAs/ACECs	Photo points and 3 x 3 photo plots	BLM annually



**5. FISHERIES AND AQUATIC
HABITAT/WATER QUALITY**

WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Water temperature	Automatic temperature recorders (Van Horn Creek)	BLM annually
Diversity of fish species	Sample populations in early fall (Van Horn Creek)	BLM in coordination with ODFW and USFWS
Macroinvertebrates	Macroinvertebrate sampling (USFS-BLM methods) (Van Horn Creek)	BLM - every 5 years for 3 cycles
Water Chemistry	Hydrolab and Hach kits (Van Horn Creek)	BLM annually
Discharge	Velocity meter	BLM annually in summer
Streambank stabilization	Photo points in key areas (Rosgen B or C channel reaches, cobble or finer particle predominant; 3 per reach plus most actively eroding area of reach; coordinated with Riparian trend monitoring to avoid duplication)	BLM every 5 years for Van Horn Creek BLM annually for most actively eroding area
Sedimentation (fine particle size)	ODFW aquatic habitat inventory method for assessing bank condition and substrate particle size in Rosgen B or C channel reaches	BLM every 10 years

6. WILDLIFE HABITAT

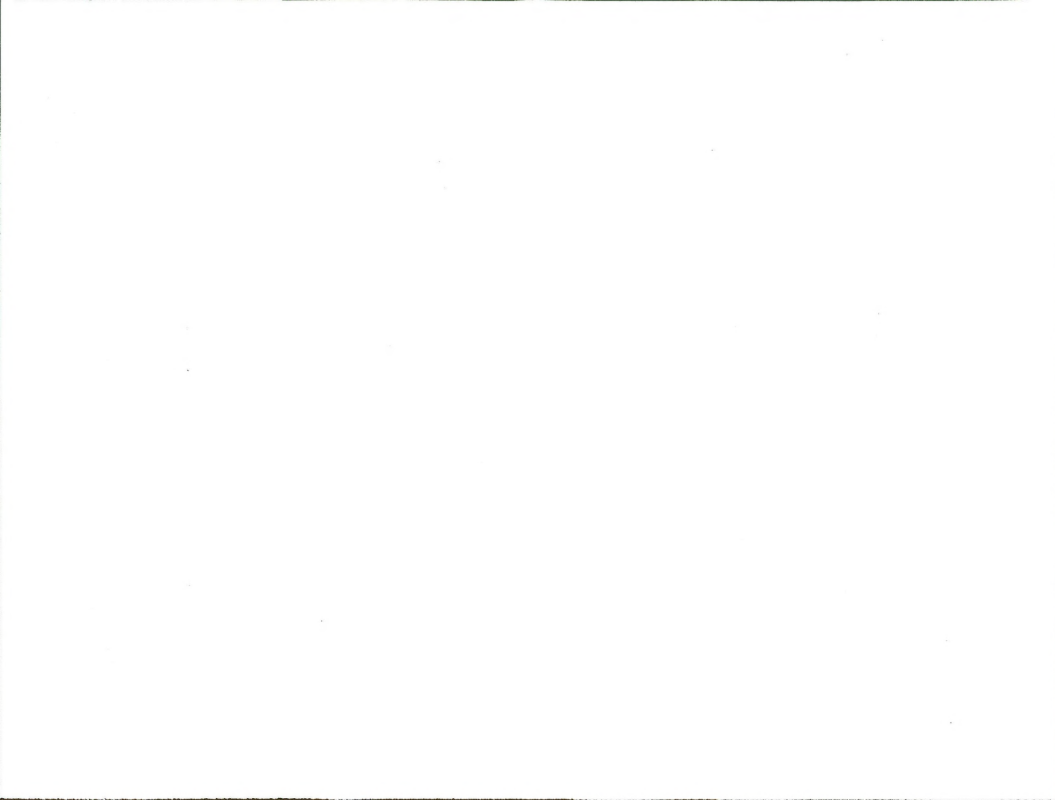
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Overall Habitat	Refer to uplands, riparian meadows and wetlands	BLM
Wildlife Populations	Bighorn Sheep, deer, and antelope inventories	BLM in coordination with ODFW

7. LONE MOUNTAIN PRESCRIBED BURN		
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Vegetation Mosaic Percent of Each Plant Community and Seral Stage Burned Over Time	Mapping - using aerial photos and orthophoto quads	BLM - preburn and post burn
Post Fire Vegetation Change	3 x 3 Photo trend plots	BLM base data first year then 3 to 5 years

8. MEADOW HABITAT		
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Species Composition	3 x 3 Photo trend plots	BLM annually
Soil Stability	Sag tape, photo points and line intercept	BLM annually
Cover (ground baseline data)	Aerial photography	BLM - 1995 and repeat in 10 years

9. WETLAND HABITAT		
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Vegetation Changes and Water Fluctuations	Photo trend	BLM annually
Aquatic Bird Production	July brood counts	BLM annually

10. NOXIOUS WEEDS		
WHAT WILL BE MEASURED	HOW MEASUREMENTS WILL BE MADE	WHO WILL DO THIS AND WHEN/FREQUENCY
Distribution and Abundance	Photo point of known sites	BLM annually
	Ocular reconnaissance to identify new sites	BLM annually



APPENDIX 12

SPECIAL STATUS, RARE, THREATENED AND ENDANGERED SPECIES LIST
FOR ANIMALS
PUEBLO-LONE MOUNTAIN ALLOTMENT

<u>SPECIES</u>	<u>U.S. FISH AND WILDLIFE SERVICE STATUS</u>	<u>OREGON DEPARTMENT OF FISH AND WILDLIFE WILDLIFE STATUS</u>	<u>OREGON NATURAL HERITAGE PROGRAM STATUS</u>
MAMMALS			
-California bighorn sheep	C2	--	--
-Pacific Western big-eared bat	C2	SC	--
-Spotted bat	C2	--	--
BIRDS			
-Bald eagle	LT	LT	1
-American peregrine falcon	LE	LE	1
-Swainson's hawk	--	SV	3
-Ferruginous hawk	C2	SV	3
-Western burrowing owl	C2	SC	3
-Bufflehead	--	SP	2
-Greater sandhill crane	--	SV	4
-White-faced ibis	C2	SV	4
-Western snowy plover	3C	LT	1
-Western sage grouse	C2	SV	4
-Yellow-billed cuckoo	--	SC	2
-Bobolink	--	SC	3
-Lewis woodpecker	--	SC	3
-Western bluebird	--	SV	4
REPTILES			
-Northern sagebrush lizard	C2	--	--
FISH			
-Lahontan cutthroat trout	LT	LT	1
-Alvord chub	C2	SV	2

ABBREVIATIONS:

- LE = Listed Endangered.
 LT = Listed Threatened.
 SC = State Critical.
 SV = State Vulnerable.
 SP = State Peripheral or Naturally Rare.
 C2 = Candidate 2. More information needed in order to propose listing.
 3C = Taxa more abundant or widespread than previously believed.
 1 = Taxa threatened with extinction or presumed to be extinct throughout the entire range.
 2 = Taxa threatened with extinction or presumed to be extinct in Oregon.
 3 = Review list for species where more information is needed before status can be determined.
 4 = Taxa of concern but not currently threatened or endangered.

APPENDIX 13
PUEBLO-LONE MOUNTAIN ALLOTMENT
MILES OF CREEK EXPECTED AND NOT EXPECTED TO IMPROVE

Stream Name	Recovery Within 15 Years (Miles)	No Recovery Within 15 Years (Miles)
McLean Creek	.55	
Unnamed Creek	.50	
Hells Canyon Creek	1.35	.60
Oregon End Creek	2.65	.45
East Creek	2.35	1.30
Stonehouse Creek	2.35	
Little Stonehouse Creek	.75	
Bodesto Creek	1.65	
Rough Creek	1.65	
Five Draw Creek	.75	
Starr Creek	1.55	.55
Sesena Creek ²	.95	1.55
Willow Creek	2.25	1.50
Little Willow Creek	.40	1.90
Little Cottonwood Creek	6.03	1.30•
Catlow Creek	2.25	
Red Point Creek	.90	
Cherry Creek	1.00	
Van Horn Creek	2.65	1.25
Reaux Creek ³		1.74
Arizona Creek	.74	.30
Colony Creek ¹	2.14	
TOTALS	33.45	14.34
PERCENT OF TOTAL	70.0%	30.0%

¹ Burned by wildfire in 1994.

² Referred to as Horse Creek on USGS topographic maps.

³ Referred to as Sesena Creek on USGS topographic maps.



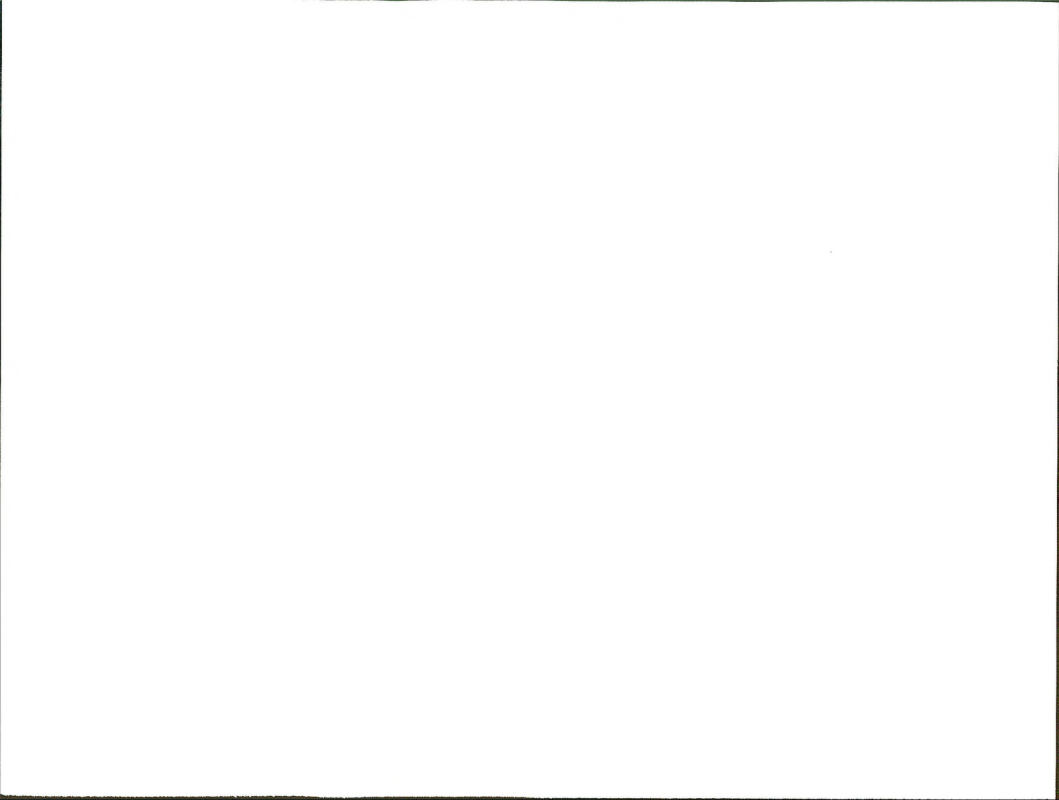
APPENDIX 14

PUEBLO-LONE MOUNTAIN ALLOTMENT GRAZING FORMULA
Alternative A

TREATMENT		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
Seasonlong	- SS												
Winter	- Wi												
Exclusion	- EX						EXCLUDED						

YEARLY GRAZING SCHEDULE

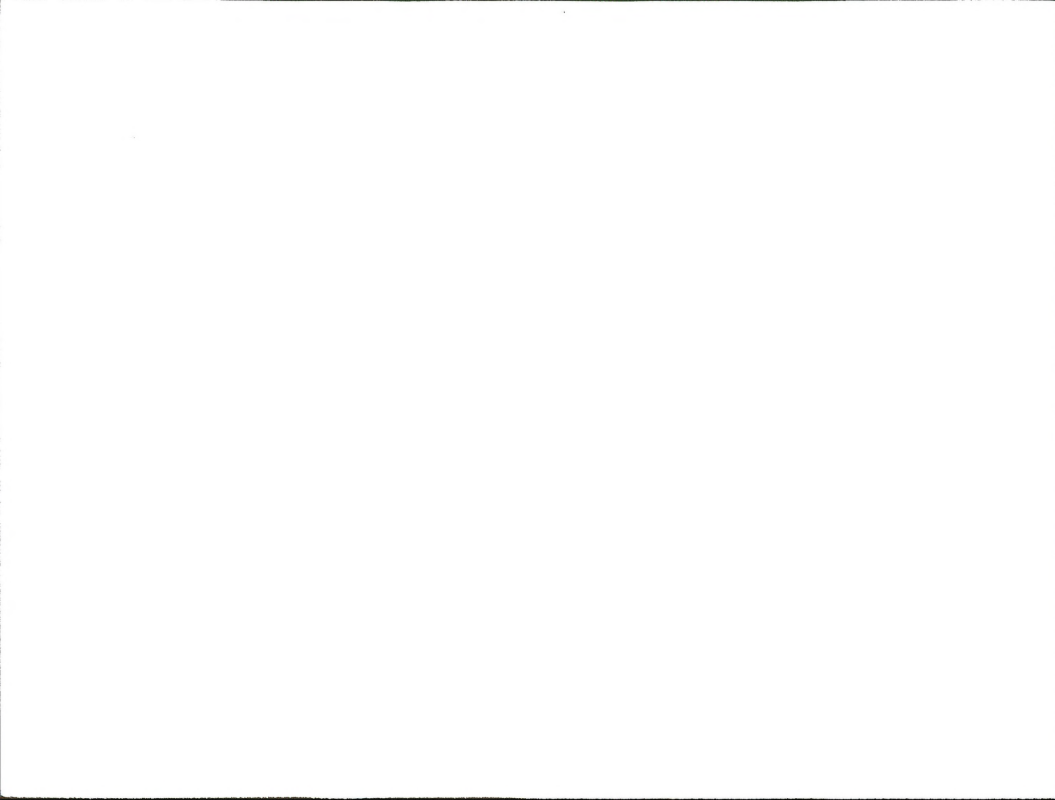
MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 1												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Basque Hills												
Desert												
North Sandhills Seeding												
Colony Seeding												
Colony Winter												
Oregon End Winter												
Pueblo Valley						EXCLUDED						
Pueblo Slough #1						EXCLUDED						
Pueblo Slough #2						EXCLUDED						



APPENDIX 15

PUEBLO-LONE MOUNTAIN ALLOTMENT GRAZING FORMULA
Alternative B

TREATMENT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
Early Spring - E												
Spring - Sp												
Spring/Early Summer - Sp/ES												
Summer - Su												
Summer/Fall - Su/Fa												
Winter - Wi												
Exclusion - EX						EXCL	UDED					



YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 1												
Colony Seeding												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Pueblo Ridge												
Basque Hills												
Desert												
North Sandhills Seeding												
Colony Winter												
North Colony Winter												
Oregon End Winter												
Starr Winter												
Pueblo Valley						EXCL	WDED					
Pueblo Slough #1						EXCL	WDED					
Pueblo Slough #2						EXCL	WDED					
Tum Tum						EXCL	WDED					

YEARLY GRAZING SCHEDULE

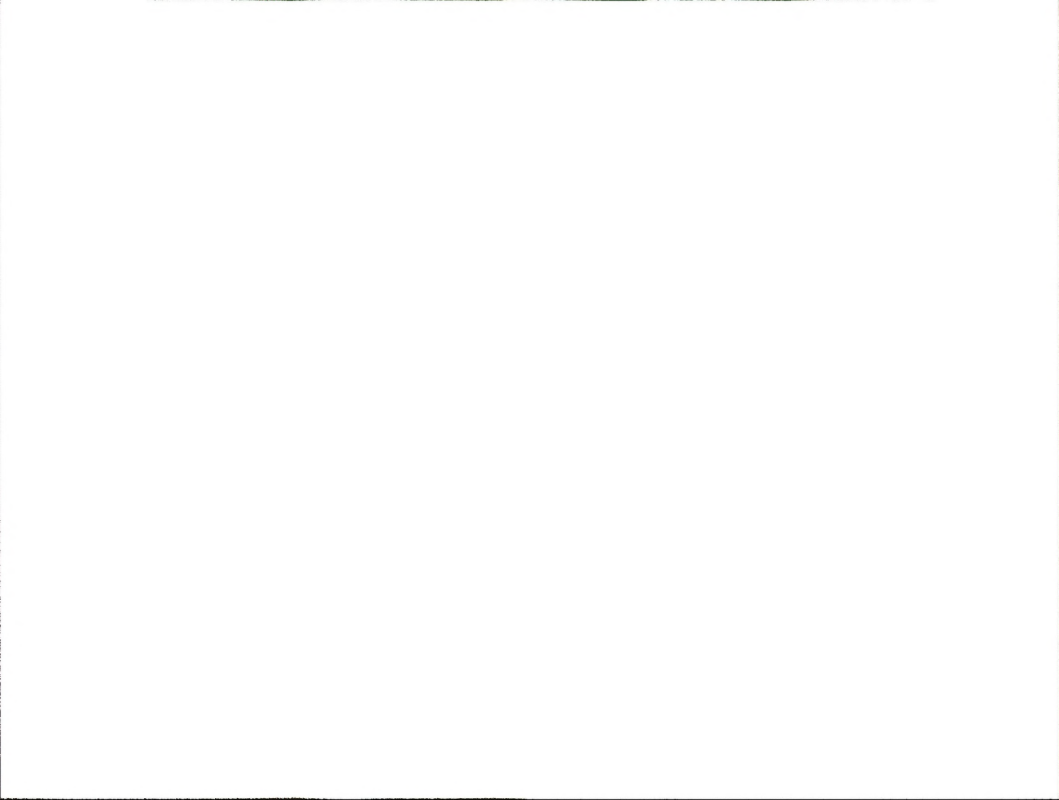
MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 2												
Colony Seeding												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Pueblo Ridge												
Basque Hills												
Desert												
North Sandhills Seeding												
Colony Winter												
North Colony Winter												
Oregon End Winter												
Starr Winter												
Pueblo Valley						EXCL	WDED					
Pueblo Slough #1						EXCL	WDED					
Pueblo Slough #2						EXCL	WDED					
Tum Tum						EXCL	WDED					



APPENDIX 16

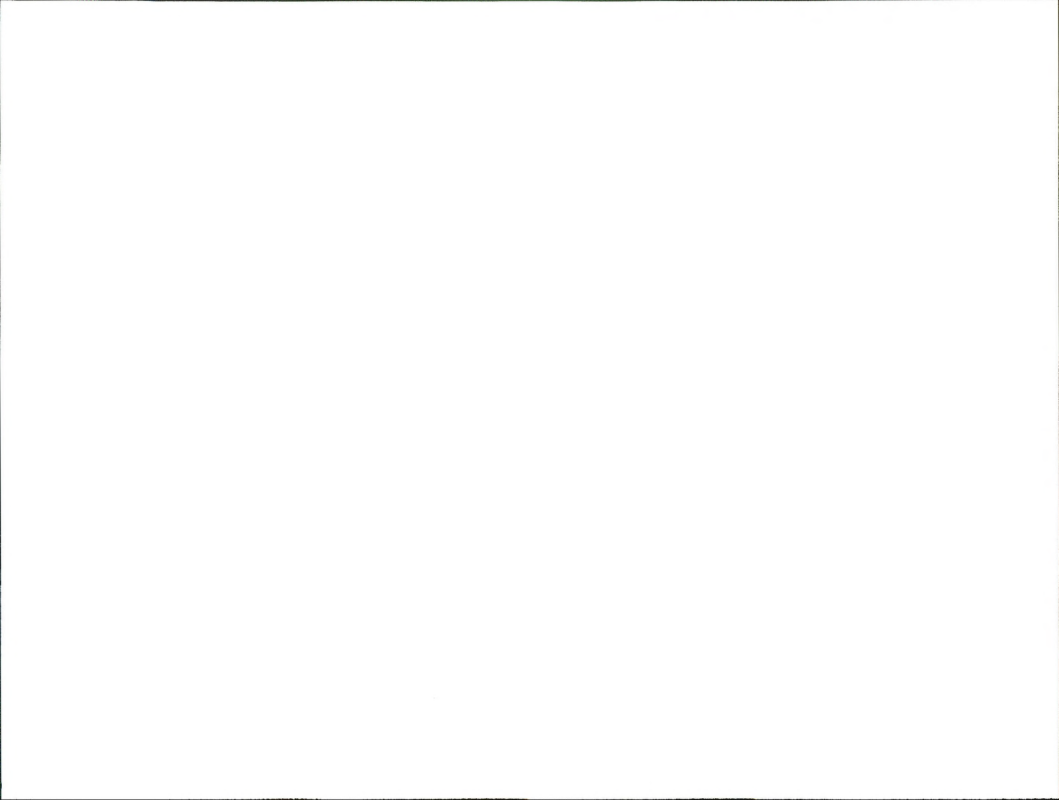
**PUEBLO-LONE MOUNTAIN ALLOTMENT GRAZING FORMULA
Alternative C**

TREATMENT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
Early Spring - E												
Spring - Sp												
Spring/Early Summer - Sp/ES												
Summer - Su												
Summer/Fall - Su/Fa												
Winter - Wi												
Rest - Rest						REST						
Exclusion - EX						EXCLUDED						



YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 1												
Colony Seeding												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Pueblo Ridge												
Black Rock												
Basque Hills												
North Desert												
South Desert												
North Sandhills Seeding												
Colony Winter												
North Colony Winter												
Oregon End Winter												
Starr Winter												
Pueblo Valley						EXCL	UDED					
Pueblo Slough #1						EXCL	UDED					
Pueblo Slough #2						EXCL	UDED					
Tum Tum						EXCL	UDED					



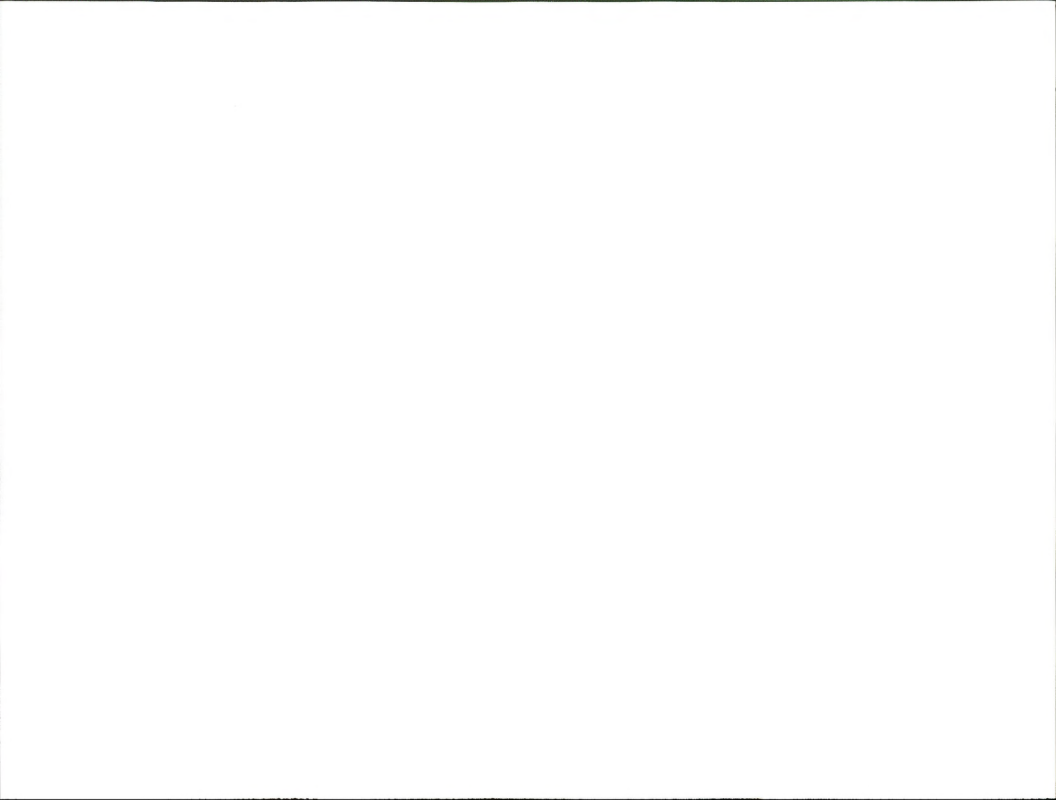
YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 2												
Colony Seeding												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Pueblo Ridge												
Black Rock												
Basque Hills												
North Desert												
South Desert												
North Sandhills Seeding												
Colony Winter												
North Colony Winter												
Oregon End Winter												
Starr Winter												
Pueblo Valley						EXCL	UDED					
Pueblo Slough #1						EXCL	UDED					
Pueblo Slough #2						EXCL	UDED					
Tum Tum						EXCL	UDED					



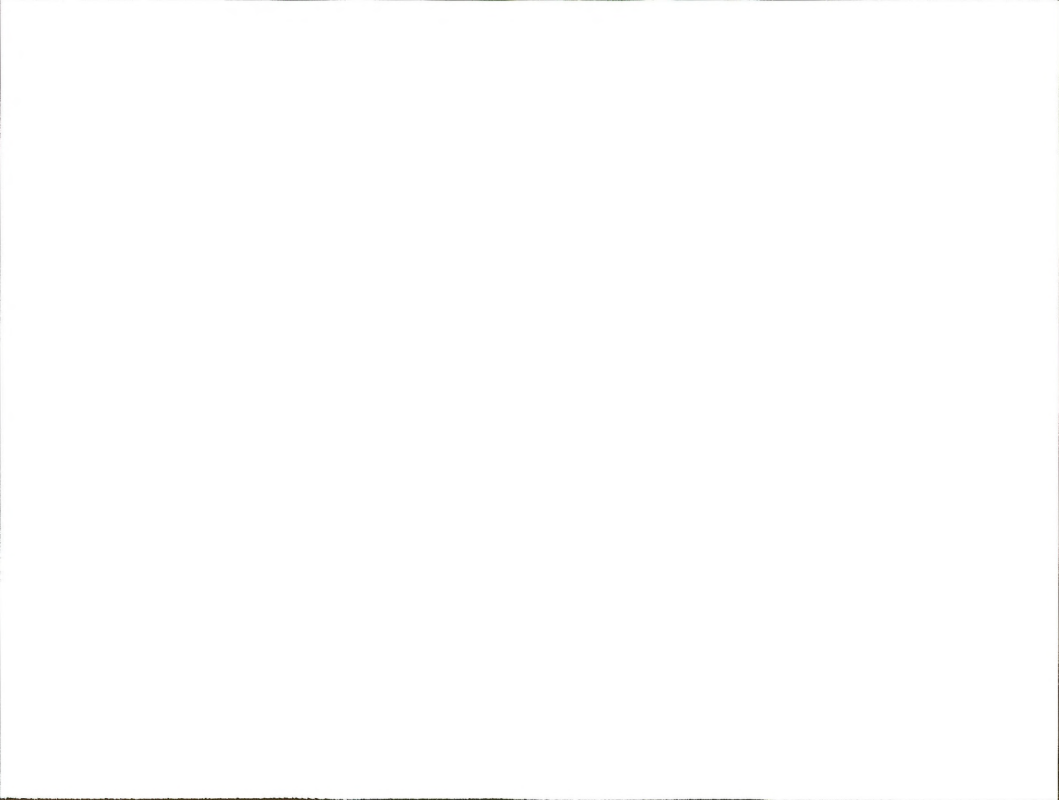
YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 3												
Colony Seeding												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Pueblo Ridge												
Black Rock												
Basque Hills												
North Desert												
South Desert												
North Sandhills Seeding												
Colony Winter												
North Colony Winter												
Oregon End Winter												
Starr Winter												
Pueblo Valley												
Pueblo Slough #1												
Pueblo Slough #2												
Tum Tum												



YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
YEAR 4												
Colony Seeding												
SE Rincon Seeding												
SW Rincon Seeding												
ME Rincon Seeding												
MW Rincon Seeding												
Pueblo Ridge												
Black Rock												
Basque Hills												
North Desert												
South Desert												
North Sandhills Seeding												
Colony Winter												
North Colony Winter												
Oregon End Winter												
Starr Winter												
Pueblo Valley						EXCL	WDED					
Pueblo Slough #1						EXCL	WDED					
Pueblo Slough #2						EXCL	WDED					
Tum Tum						EXCL	WDED					



APPENDIX 17
PHENOLOGICAL DATA
KEY SPECIES AND CRITICAL GROWING PERIOD

<u>PASTURE</u>	<u>KEY SPECIES</u>	<u>CRITICAL GROWING PERIOD¹</u>	<u>ALLOWABLE UTILIZATION²</u>
Basque Hills	Needleandthread	06/01-07/01	40%
	Thurber Needlegrass	06/01-07/01	40%
Pueblo Ridge	Bluebunch Wheatgrass	06/01-07/01	40%
	Idaho Fescue	05/15-07/01	40%
	Thurber Needlegrass	06/01-07/01	40%
Desert: (includes Black Rock, North and South Desert)	Bluebunch Wheatgrass	06/01-07/01	40%
	Idaho Fescue	05/15-07/01	40%
	Thurber Needlegrass	06/01-07/01	40%
SE Rincon Seeding	Crested Wheatgrass	05/01-06/15	60%
SW Rincon Seeding	Crested Wheatgrass	05/01-06/15	60%
ME Rincon Seeding	Crested Wheatgrass	05/01-06/15	60%
MW Rincon Seeding	Crested Wheatgrass	05/01-06/15	60%
Colony Winter	Crested Wheatgrass	05/01-06/15	60%
	Indian Ricegrass	05/15-07/01	50%
	Basin Wildrye	06/01-07/01	50%
Colony Seeding	Crested Wheatgrass	05/01-06/15	60%
N Sandhills Seeding	Crested Wheatgrass	05/01-06/15	60%
	Indian Ricegrass	05/15-07/01	50%
North Colony Native	Indian Ricegrass	05/15-07/01	50%
	Basin Wildrye	06/01-07/01	50%
Starr Winter	Bottlebrush Squirreltail	05/01-06/15	50%
	Thurber Needlegrass	06/01-07/01	50%
Oregon End Winter	Needleandthread	06/01-07/01	50%
	Indian Ricegrass	05/15-07/01	50%

¹ The critical growing period is defined as beginning with the emergence of the basil bud through seed development in most plants.

² The allowable utilization is determined to be the maximum allowable amount of forage that can be removed and still provide for plant health requirements.

Written Description of Impacts to Wilderness Values Per WSA

Reference in text is to Environmental Impacts of the Alternatives, Alternatives B and C, Wilderness Study Areas, Impacts to Wilderness Values Tables.

Each specific project being proposed in these alternatives, within or immediately adjacent to WSAs, will be addressed. The context within which the terms "direct", "indirect", "long-term", "short-term" are defined regarding the wilderness resource is stated as follows:

Direct - An action that would have an immediate impact on the landscape.

Indirect - The result of an action that would have an impact on the landscape over time.

Long-Term - A project or action that is deemed as permanent or would create surface disturbance.

Short-Term - A project or action that is temporary (has an established termination timeframe) and would not create surface disturbance beyond normal, routine, and authorized use.

Analysis are as follows:

Pueblo Mountains WSA:

Oregon End Fence (found in Alternatives B and C) - This project is outside the WSA, but for a short distance would be immediately adjacent to its boundary. Where the fence is adjacent to the WSA it would follow alongside an existing powerline. No direct impacts are recognized with the exception of short-term effects from noise created during the construction of the fence.

Rincon-Oregon End Fence (found in Alternatives B and C) - Of this overall fence, 3.25-miles would be along the Oregon End Road and outside the WSA, but would be immediately adjacent to its boundary. The fence would create an addition to outside sights and sounds, however, there are no buffer zones. In view of this, the action is acceptable from a WSA perspective. There would be short-term impacts to solitude during the time of fence construction. The actions of the fence would create beneficial effects. There would be direct negative and long-term impacts to naturalness, primitive and unconfined recreation, and scenic values.

Pueblo Mountains Gap Fences (3) (found in Alternatives B and C) - The placement of these three short gap fences, totaling .625-mile would have a positive overall effect in improving ecological values. High mountain meadows along with numerous riparian areas would begin to show improvement immediately and would continue to improve over the long term. This action would help restore meadows and riparian areas by controlling livestock movement during critical plant growing periods and times of wet and easily compactable soil conditions, which normally occurs during the spring season. Over time native vegetation would become healthier. Although the fences have some direct negative impacts to naturalness, primitive and unconfined recreation, and scenic values, the benefits would offset any adverse impacts.

Naturalness, primitive and unconfined recreation, and scenic values would be indirectly enhanced through the actions of these three gap fences.

South Rincon Pipeline (found in Alternatives B and C) - Of this total pipeline length of 4.25 miles, 2.75 miles would be immediately adjacent to but outside the WSA following within the existing disturbed area of the Oregon End Road. There would be short-term negative impacts to solitude and scenic values during the construction of the project.

Rincon WSA:

Rincon-Oregon End Fence (found in Alternatives B and C) - Of this total fence length of 4.25 miles, 2.75 miles would be constructed immediately adjacent to but outside the WSA staying within the disturbed area of the road. This fence would create an addition to outside sights and sounds to the WSA, however, there are no buffer zones. In view of this, the action is acceptable from a WSA perspective. There would be short-term impacts to solitude during the time of fence construction. Livestock are likely to trail alongside the fenceline within the WSA creating new trails where soil and vegetation would be trampled. This would have a negative influence on ecological values. However, this fence would also better control livestock movement and would improve upon ecological conditions overall.

In addition, there would also be a permanent .25-mile fence extension located inside the WSA. This would improve ecological values by protecting a riparian area. The fence is also being located in a place to prevent livestock from bunching up in an area where they would probably concentrate if the fence were placed at a different location. Direct, negative, and long-term impacts would occur to naturalness, primitive and unconfined recreation, and scenic values due to the addition of this new fence.

Catlow Gap Fences (2) (found in Alternatives B and C) - There would be direct, negative, and long-term impacts to naturalness, primitive and unconfined recreation, and scenic values in the WSA with the addition of these fences. Ecological values would show improvement through enhanced vegetation communities over time. These short, permanent fences totaling 1-mile within the WSA would be placed to control the current unrestricted access by livestock to the Desert Pasture from the Basque Hills Pasture. The herbaceous vegetation will benefit from seasonal deferment of livestock within the Desert Pasture. There would be limited short-term impacts to solitude during construction of these projects.

Long Draw Gap Fence (found in Alternatives B and C) - There would be 150 feet of new fence within the WSA. Naturalness, primitive and unconfined recreation, and scenic values would be slightly negatively impacted. Ecological values would be enhanced through improved vegetation communities over time. The remaining .25-mile of fence would be adjacent to but outside the WSA. This would have a negative influence on outside sights and sounds to the WSA.

South Rincón Pipeline (found in Alternatives B and C) - Of this total pipeline length of 4.25 miles, 2.75 miles would be immediately adjacent to but outside the WSA following within the existing disturbed area of the Oregon End Road. This would have a negative influence on outside sights and sounds to the WSA, but is an acceptable activity because it is outside the boundary.

There would be an addition of .25-mile of aboveground pipeline and associated water trough located within the WSA as a result of this new pipeline. Negative direct impacts would occur to naturalness and scenic values due to the addition of these new structures within the WSA. There would be loss of vegetation and soil compaction where livestock concentrate around the watering trough. Increased livestock trailing to the water source would also occur due to the attraction of water. Although there would be surface disturbance occurring at the watering trough, ecological values overall would be enhanced because this water trough would better disperse livestock throughout the area than is now occurring. This would result in an improvement in helping restore a more native plant community over the long term. Impacts are considered short term regarding the wilderness resource because these new structures are temporary and would be removed if the area were designated as wilderness. Results of these developments will enhance resources and any adverse impacts identified are offset by the benefits stated and because the project is temporary. There would be short-term impacts to solitude during the time when the project is constructed.

In Alternative C the .25-mile aboveground pipeline would be permanent instead of temporary as in Alternative B. This would have direct, negative, and long-term impacts to naturalness, primitive and unconfined recreation, and scenic values.

Long Draw Well (found in Alternatives B and C) - Although this well is proposed just outside the WSA there would be negative impacts from livestock trailing into this new water source affecting Ecological values within the WSA. Livestock trailing has occurred historically within .25-mile from the proposed well site to an existing watering site in an adjacent area. The Well itself would have a negative influence on outside sights and sounds to the WSA.

Basque Hills Well (found in Alternatives B and C) - This project is outside the WSA, but is located near its boundary. Effects created by this new water development would create minor impacts within the WSA as some increased livestock trailing would occur in the area. This would have a slight negative impact on ecological values.

West Oregon End Pipeline (found in Alternatives B and C) - Although this project is outside the WSA the pipeline would be adjacent to its boundary. Solitude would be negatively impacted in the short-term during the construction phase. As a result of this project, a water trough would be removed from inside the WSA. This would have direct, positive, and long-term affects to naturalness and scenic values.

Black Rock Drift Fence (found in Alternative C) - There would be 2.5 miles of fence added to the WSA. This would have direct and long-term negative impacts to naturalness, primitive and unconfined recreation, and scenic values. Ecological values would be improved by better controlling livestock, which would enhance plant communities. Solitude would also be directly and negatively impacted for the short-term during the construction of the project.

Desert Division Fence (found in Alternative C) - There would be 4.5 miles of fence added to the WSA. This would have direct and long-term negative impacts to naturalness, primitive and unconfined recreation, and scenic values. Ecological values would be improved by better controlling livestock which would enhance plant communities. Solitude would also be impacted during the construction of the project.

Southwest Rincon Pipeline Extension (found in Alternative C) - There would be approximately 2 miles of new pipeline and associated water troughs located within the WSA. This would create direct, negative and long-term impacts to naturalness and scenic values as new substantial developments would be added. An extensive amount of surface disturbance would also occur within the WSA as this would be a buried pipeline.

Covote Hole Well (found in Alternative C) - This well is outside the WSA, but is adjacent its boundary. A reservoir already exists in this same area, therefore, no new impacts to the WSA are anticipated except to short-term impacts to solitude during the well drilling operation and subsequent development period.

Basque Hills WSA:

Basque Hills Well (found in Alternatives B and C) - This project is outside the WSA, but is located near its boundary. Effects of this new water development would create minor impacts within the WSA as some increased livestock trailing would occur in the area. This would have a slight negative impact on ecological values.

Gusher Well Trough Relocation (found in Alternatives B and C) - Direct and long-term positive effects would occur to naturalness, solitude, ecological, and scenic values when this "grandfathered" use is moved from within the WSA to another location and outside any WSA. There would be surface disturbance within the WSA during time when the new pipeline is buried for 20 feet inside the WSA and also when reclamation actions are taken to restore an existing disturbance (waterhole re-contoured to blend-in with the surrounding topography). The positive effects of this overall project offset any adverse affects that would take place at this site. There would be negative short-term impacts to solitude during the time the project site is relocated.

North Basque Hills Well (found in Alternative C) - This well and associated developments are located in the center of the WSA. Negative direct and long-term impacts would occur primarily to naturalness and scenic values as new developments, as well as surface disturbance, would occur within the WSA. There would be short-term impacts to solitude during the construction of the project. New impacts to vegetation and soils would also occur due to livestock concentrating around the water development. This would impact ecological values.

Hawk Mountain WSA:

Long Draw Well (found in Alternatives B and C) - Although this well is proposed just outside the WSA, there would be negative impacts from livestock trailing into this new water source affecting ecological values within the WSA. Livestock trailing has occurred historically within .25-mile from the proposed well site to an existing watering site in an adjacent area. The well itself would have a negative influence on outside sights and sounds to the WSA.

APPENDIX 19

DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR
PUEBLO-LONE MOUNTAIN ALLOTMENT

EA-OR-026-93-030

The Bureau of Land Management (BLM), Burns District, Andrews Resource Area has considered several alternatives and analyzed three alternatives designed to improve management of the Pueblo-Lone Mountain Allotment.

The alternatives are described in detail in this Final Environmental Assessment (EA) No. OR-026-93-030. A draft EA was reviewed by interested publics, Oregon Department of Fish and Wildlife, and a BLM interdisciplinary team. Comments were evaluated and significant changes are reflected in this final document.

The EA and this Finding of No Significant Impact (FONSI) are tiered to the Final Oregon Wilderness Environmental Impact Statement (EIS), Volume 3 (December 1989). The EA is in conformance with the 1982 Andrews Management Framework Plan (MFP) and the 1983 Andrews Grazing Management Program Final EIS and its Record of Decision.

Under the Preferred Alternative (Alternative B), significant adverse impacts on the quality of the human environment would not occur based on the following considerations:

- Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests, or the locality.
- Public health or safety would be improved as the health of the natural environment improves.
- There are no prime or unique farmlands, or known paleontological resources on public land within the area.
- Floodplains, wetlands, riparian habitat, and water quality would be protected and enhanced. Watershed functions would be fully restored.
- The preferred alternative, along with other previous actions, will not result in significant cumulative adverse impacts to the important and relevant resource values of the area involved.
- Threatened or endangered species or their habitat determined to be critical under the Endangered Species Act of 1973 would not be adversely impacted.
- Cultural - Cultural resources on public land would not be impacted. Native American religious sites would not be affected and any Native American traditional activities which might feasibly be practiced in the area by contemporary Indian tribes would be enhanced by the improved natural environment.
- Wilderness characteristics would be enhanced throughout the planning area as riparian areas and watershed health improve. The action of creating temporary structures would be reversible and the materials would be retrievable.
- Wildlife habitat would improve.

- Recreation opportunities would be enhanced as the overall health of the land improves.
- Visual Resources - The proposed fencing would have a slight impact on visual resources for a short distance. Grazing management would have a significant impact on overall visual quality as the quality and quantity of vegetation improves in the riparian areas and uplands and wildlife numbers increase in response to the improved habitat.
- None of the alternatives violate Federal, State, or local law requirements imposed for environmental protection. There are no known inconsistencies with officially approved or adopted Federal, State, or local natural resource-related plans, policies, or programs.
- Adverse impacts identified are minimal. Continued resource monitoring would ensure that no significant adverse impacts occur. As needed, appropriate management would be instituted to protect important natural and cultural resource values. Impacts to threatened or endangered species habitat or cultural resources, which could not be mitigated, would trigger modification or cancellation of affected portions of Federally approved or permitted actions.
- Decisions tied to actions in the preferred alternative would not significantly alter other approved land use allocations or resource management direction in the existing MFP.

Determination: On the basis of the information contained in the EA and all other information available to me as summarized above, it is my determination that recommendation or approval of the preferred alternative does not constitute a major Federal action affecting the quality of the human environment. Therefore, an EIS is unnecessary and will not be prepared.

DRAFT

Andrews Resource Area Manager

Date

BLM LIBRARY
 RS 150A BLDG 86
 DENVER FEDERAL CENTER
 P.O. BOX 25047
 DENVER, CO 80225

R'S CARD	13 1995	Pueblo-Lone Mountain allotment management plan,	OFFICE	DATE RETURNED

(Continued on reverse)

HD 243 .O7 P843 1995

Pueblo-Lone Mountain
allotment management plan,

BLM LIBRARY
RS 150A BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225

